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Ceremonial Inauguration & Foundation Stone Laying Ceremony of Techno India University, Tripura

Techno India University, Tripura (TIUT) hosted the Grand Inauguration of New Infrastructure and Foundation Stone LayingCeremony at the sprawling Techno India Knowledge Campus in Agartala on 14thNovember 2025. It was graced by Prof. (Dr.) Manik Saha, Hon'ble Chief Minister ofTripuraas Chief Guest, along with Shri Kishor Barman, Minister of Higher Education, Panchayat & GA (Political) Govt. of Tripura, Padma Shri Prof. (Dr.) Arunoday Saha, Former Vice Chancellor, Tripura University, Shri Ratan Lal Nath,Minister Dept of Power, Agriculture & Farmers' Welfare, Law (Parliamentary Affairs) & Election Govt. of Tripura, Shri Pranab Sarkar, President, Agartala Press Club, Satyam Roychowdhury, Founder Managing Director, Techno India Group and Chancellor, Techno India University, Tripura, Dr. Manoshi Roychowdhury, Co-Chairperson, Techno India Group, Meghdut Roychowdhury, Chief Innovation Officer, Techno India Group, Dr. Sanku Bose, Group CEO, Techno India Group, Vice Chancellor, Sister Nivedita University, Prof. (Dr.) Ratan Kumar Saha, Vice Chancellor, Techno India University, Tripura, Prof. Supratim Sen, Pro Vice Chancellor (Admin), Sister Nivedita University.The day began with sapling plantation and the inauguration of aBlood Donation Camp. The Hon'ble Chief Minister also inaugurated the newly developed Tagore Lounge and interacted with students at the Students' ProjectExhibition and traditional food stalls. The ceremony commenced with anInvocation Song and Lighting of the Lamp.

As part of social outreach initiative, TIUT distributed books, school bags andstationery to local children. Awards and recognitions were presented to students and faculty members for achievements in academics and co-curricular activities.A cultural program followed in the evening featuring a diverse array of performances including aNational Integrity Dance by students of Techno College of Engineering, Agartala, a dramaadaptation of Rabindranath Tagore's 'Bisarjan' and traditional Hoja Giri and Bihu dance. Stunning performances by Santanu Roychowdhury and then Tripura's all-female band Meghbalika enthralled the audience.

SNU's Grand Vision: Building Life-Ready Global Leaders in the Age of AI

"In the age of AI, emotional strength becomes a competitive advantage."

Sister Nivedita University (SNU) is entering a defining phase of its transformation-one where our aspirations rise beyond academic excellence toward global recognition, societal impact, and student empowerment at scale. As India advances confidently into the age of Artificial Intelligence and Industry 5.0, SNU embraces the responsibility to create graduates who are not merely job-ready, but life-ready, world-ready, and future-ready.

Our vision is anchored in the belief that a great university does not just prepare students for employment-it prepares them for life. It shapes human character, nurtures emotional resilience, cultivates global perspectives, and instils values that remain constant even when technology changes at lightning speed.

In today's rapidly changing world, success demands far more than technical knowledge. Employers, communities, and global societies seek individuals who can think critically, collaborate meaningfully, solve complex problems, and lead with empathy. SNU's Life-Ready Graduate Philosophy is therefore built on the C3P Framework: Curiosity, Creativity, Compassion, and Purpose. These competencies are infused across the curriculum, student engagement model, and campus culture.

Artificial Intelligence brings not only efficiency and speed but also psychological pressures. Students today are navigating digital overload, identity anxiety, and constant expectations amplified by algorithm-driven environments. As Vice Chancellor, I see mental well-being not as an optional service but as a foundational pillar of student success at SNU.

We provide structured counselling systems, emotional resilience workshops, mindfulness practices, creative clubs, performing arts spaces, and strong peer-support networks. Our mission is to help every student become AI-smart yet emotionally grounded-capable of navigating a future where machines think fast, but only humans can think with heart.

The launch of the School for Lifelong Learning (SLL) marks a major step in SNU's evolution. SLL ensures that SNU becomes a continuous learning ecosystem where students, alumni, faculty, and working professionals can upskill, reskill, and reinvent themselves anytime in life.

SLL will offer micro-credentials, global certifications, modular courses, industry-aligned skill pathways, leadership training, and career accelerators. This positions SNU as a future-ready learning destination in Eastern India.

Our global ambition is to emerge as a respected international institution built on innovation, integrity, and inclusion. We are expanding collaborations across the US, Europe, Australia, New Zealand and Asia, strengthening co-op education, building Centres of Excellence, and enabling international mobility, research, and global exposure for students.

SNU's vision is bold yet achievable: to shape graduates who excel in the AI-driven economy while uplifting communities and representing India with purpose and pride on the global stage.

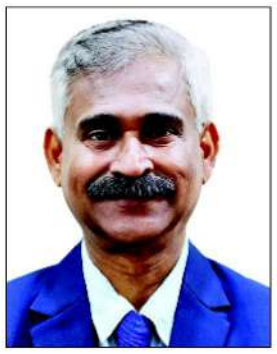
"Our mission is bold yet clear - to produce life-ready, world-ready graduates who lead with humanity."

PROF. DR. SANKU BOSE
Vice Chancellor, *Sister Nivedita University*
GCEO*, Techno India Group*

Sister Nivedita University proudly hosted a historic ceremony at Dhano Dhanno Auditorium in Kolkata on November 12, 2025 where **Mamata Banerjee, the Hon'ble Chief Minister of West Bengal** was conferred with the Honorary **D.Litt. by the prestigious Okayama University, Japan.** Sister Nivedita University being the partner university of Okayama University in India, Chancellor Satyam Roychowdhury presented the Vote of Thanks after Dr. Yasutomo Nasu, the President of Okayama University along with his team of delegates from Japan, presented the D.Litt. to the CM.

The ceremony was accompanied by beautiful cultural performances by Dona Ganguly and her dance troupe, and also by the faculty members and students of Sister Nivedita University, Rabindra Bharati University and Calcutta University.

Making Science Matter: A regenerative step beyond sustainability



The concept of sustainability, though well-intentioned, often rests upon maintaining the status quo rather than transcending it. The sustainable development model, though crucial for environmental awareness, operates within the same industrial and economic paradigms that caused the crisis in the first place. It seeks equilibrium in a world where exploitation and extraction are systemic. Consequently, a paradigm shift towards regeneration is necessary-one that views humans not as external managers of the biosphere but as active participants within it.

A regenerative model moves beyond the conservative logic of sustainability by emphasising the restoration of ecological systems, the healing of social fabrics, and the creation of resilient communities. Whereas sustainability seeks continuity, regeneration seeks transformation. This shift demands a different orientation of science-one that values interconnectedness, circularity, and reciprocity. In the regenerative paradigm, science must learn from nature's patterns rather than imposing control over them. Concepts like biomimicry, circular economy, permaculture, and ecological restoration embody this ethos, showing how systems can be designed to replenish rather than deplete.

To make science matter is to bridge the gap between scientific knowledge and lived experience, between laboratory insights and community realities. Science must evolve from being an isolated domain of expertise to a participatory and ethical practice. This involves three crucial dimensions: epistemological, institutional, and ethical transformation. The epistemological shift requires integrating diverse forms of knowledge-indigenous wisdom, local practices, and community-based research-with mainstream scientific inquiry. Traditional ecological knowledge for example, provides a profound understanding of how ecosystems function through centuries of observation and interaction. When coupled with modern scientific methods, this hybrid knowledge system becomes a powerful tool for regeneration. Institutions of science-universities, research centres, and industries-must reorient their missions. Instead of prioritising economic output or technological novelty, they must pursue research that regenerates social and environmental systems. Transdisciplinary collaboration, citizen science, and open-access knowledge platforms can democratise scientific practice and make it responsive to real-world needs.The ethical dimension demands that science adopt a regenerative mindset grounded in stewardship rather than exploitation. Scientific progress should be measured not by patents and profits but by its contributions to planetary health, community resilience, and cultural vitality.

In agriculture, regenerative farming practices rebuild soil fertility, enhance biodiversity, and sequester carbon, reversing decades of degradation caused by industrial agriculture. These methods, grounded in ecological science, mimic natural cycles of renewal and enhance the planet's capacity to sustain life. In energy research, scientists are moving beyond carbon-neutral technologies towards carbon-negative innovations-such as biochar production and direct air capture-that actively restore atmospheric balance. In urban design, regenerative principles inspire cities that function like living organisms, integrating green infrastructure, renewable energy, and closed-loop waste systems. Similarly, in medicine and biotechnology, regenerative research focuses on restoring tissue, function, and vitality rather than merely treating symptoms. The common thread across these fields is a scientific ethos of regeneration-restoring what has been lost and nurturing what can flourish.

The regenerative turn in science also redefines its relationship with society. For too long, scientific authority has been exercised in top-down ways, alienating communities from participation in knowledge-making. To make science matter, it must be embedded within the social and ecological contexts it seeks to serve. Citizen science initiatives, participatory mapping, and community-based environmental monitoring exemplify how local people can co-produce knowledge and influence policy. Moreover, science must engage with planetary health-the recognition that human wellbeing is inseparable from the health of the Earth's systems. This holistic framework integrates environmental science, public health, and social equity, revealing that the degradation of ecosystems directly translates into the erosion of human life quality. Regenerative science thus seeks to restore these interdependencies by fostering systems that regenerate both the planet and its people. Education plays a central role in cultivating a regenerative scientific ethos. Traditional science education often emphasises reductionist thinking-breaking phenomena into parts for analysis. Regenerative education, by contrast, fosters systems thinking, empathy, and ethics. It encourages learners to see themselves as co-creators within living systems, responsible for nurturing rather than exploiting. Universities and research institutions can lead this transformation by embedding regenerative principles into curricula, research agendas, and community outreach.Interdisciplinary learning, project-based research, and real-world problem-solving are essential strategies. For instance, students studying renewable energy should also learn about ecological restoration, social justice, and economic equity. By integrating these dimensions, science education can produce not only innovators but also stewards of the planet. Policy frameworks must evolve to support regenerative science. Governments and international organisations can incentivise regenerative research through funding, tax benefits, and green innovation programmes. Policies should encourage long-term ecological investments rather than short-term economic gains. Moreover, integrating scientific expertise into policymaking should be accompanied by public dialogue and participatory governance to ensure transparency and inclusivity.Ultimately, regeneration is not merely a scientific or economic strategy-it is a moral imperative. It demands humility, recognising that humanity's power must be balanced with responsibility. Making science matter means ensuring that knowledge serves life, not profit, that innovation fosters harmony, not exploitation. The regenerative path asks scientists, policymakers, and citizens alike to act as healers of the Earth, restoring what centuries of industrial progress have eroded.

To make science matter is to align it with the regenerative forces of nature and the moral aspirations of humanity. Beyond sustainability lies a vision of renewal-where science becomes a living dialogue with the planet rather than a monologue of control. In embracing regeneration, science can transcend its utilitarian limits and emerge as a creative, ethical, and transformative force. It can rebuild soils, heal communities, and revive ecosystems. It can restore hope. By making science regenerative, humanity takes a decisive step not just toward surviving on Earth but thriving with it.

PROF. (DR.) DHRUBAJYOTI CHATTOPADHYAY
Ph.D. FASc., FNASc., FAScT
Pro-Chancellor
(Techno India Group of Universities) & Central Academic Leader

From the Desk of the Registrar

Bridging Cultures, Empowering Minds: The Spirit of Internationalization in Education

In the evolving landscape of higher education, the internationalization of education stands as a compelling vision and an urgent necessity. At Sister Nivedita University, this imperative deeply resonates with the founding ethos inspired by Sister Nivedita herself, a visionary who understood that education is not only a conduit of knowledge but a powerful bridge connecting humanity across cultures and continents. Internationalization transcends the transactional exchange of students or faculty; it is an intentional cultivation of global citizenship, an expansive worldview that situates learners as part of a shared human narrative. It is through this lens that our institution endeavours to nurture not only academic excellence but also the ethical and empathetic capacities essential for leadership in a globalized world.

Sister Nivedita's Enduring Vision

Margaret Noble, revered as Sister Nivedita, was a woman ahead of her time, devoted to awakening India's potential through education that was deeply rooted in cultural respect, inclusivity, and empowerment. Guided by the ideals of Swami Vivekananda, she championed education as a transformative force-one that cultivates not just intellect but character, social responsibility, and a profound sense of belonging to the wider world community.

Her vision of global citizenship emanated from the conviction that humanity's diverse cultures are not barriers, but opportunities for mutual enrichment and understanding. International education, in this spirit, becomes a sacred dialogue, meeting of civilizations that nurtures peace, collaboration, and shared progress.

Building Bridges Across Cultures

Higher education institutions are uniquely positioned to serve as the crucibles of this intercultural engagement. The many avenues of academic exchange-student mobility, international collaborations, joint research initiatives-become platforms where dialogues of difference evolve into conversations of possibility. At Sister Nivedita University, this ethos informs all aspects of our efforts to internationalize our campus. Beyond fostering partnerships and academic exchanges, we prioritize intellectual openness and cultural sensitivity, enabling our students and faculty to engage with global perspectives respectfully and critically.

The classroom thus transforms into a dynamic space of cross-cultural interaction. When a student from India collaborates with peers from Europe, Africa, or Asia, they are not simply sharing knowledge-they are bridging worldviews, dismantling stereotypes, and cultivating empathy. Such experiences prepare graduates to navigate complex global challenges with creativity and compassion.

Education as a Catalyst for Empowerment and Inclusion

Internationalization is inherently linked to the principles of equity and social justice. It presents an opportunity to widen access to knowledge and create pathways for underrepresented communities to participate fully in global discourse. Sister Nivedita passionately believed in the power of education to liberate and empower marginalized groups, particularly women, by expanding their horizons and freedom.

Our commitment to inclusion and diversity reflects this legacy. We seek to build an academic environment that celebrates plurality-of gender, ethnicity, nationality, and thought-recognizing that such diversity enriches learning outcomes and fosters cultural intelligence. Preparing students to engage in diverse environments equips them not only with marketable skills but with the wisdom to lead humanely.

Fostering Conscious Leadership

True internationalization demands more than superficial engagement; it calls for conscious leadership-the cultivation of values-driven individuals prepared to assume responsibility for their communities and the planet. The complexities of our interconnected world require leaders who embrace ethical decision-making, sustainability, and human dignity as core principles. Sister Nivedita University aspires to nurture such leaders. Our programmes deliberately integrate interdisciplinary learning, community engagement, and global perspectives, enabling students to emerge as thoughtful, engaged citizens who embody the philosophy of vasudhaiva kutumbakam-the world is one family.

Honouring Legacy through Global Education

Reflecting upon Sister Nivedita's own journey-from Ireland to India, from a seeker of truth to a servant leader-offers rich insight into the transformative potential of international education. Her life was a living example of cross-cultural synthesis that transcended difference and championed universal values.

In carrying forward this heritage, Sister Nivedita University is committed to deepen internationalization not merely as an institutional goal but as a profound human mission. We envision education as a means to nurture intellectual rigor and social conscience alike, to foster dialogue over division, and to empower every learner to contribute to a more just and harmonious world.

The bridges built by international education are more than pathways for knowledge-they symbolize hope, unity, and shared progress. As educational institutions, let us honour this sacred trust, cultivating spaces where differences are cherished, inequalities addressed, and the spirit of learning inspires transformative action. In a world, marked by complexity and rapid change, the call to global citizenship and cultural understanding is urgent. Sister Nivedita's vision reminds us that education is the greatest gift and responsibility-to illuminate minds, awaken hearts, and build bridges that connect us all.

SUMANTA BASU
Registrar, *Sister Nivedita University*

Nano-Bio Analytical Technologies: A New Frontier for Sustainable Aquaculture and culture-based fisheries

Aquaculture has emerged as one of the fastest-growing food-producing sectors worldwide, meeting the rising demand for protein-rich food in a world heading toward a population of 9 billion by 2050. Yet, the industry faces serious challenges from abiotic and biotic stressors, ranging from chemical pollutants and biotoxins to bacterial, viral, fungal, and parasitic infections. These stressors not only reduce fish productivity but also threaten environmental balance and consumer health.Conventional detection methods for these contaminants are often time-consuming, laboratory-dependent, and inaccessible to farmers when immediate action is needed. The industry, therefore, urgently requires real-time, cost-effective, and user-friendly diagnostic tools for on-site monitoring. Here, nanotechnology and bioanalytical innovations offer a transformative solution.

Nanotechnology, dealing with materials smaller than 100 nm, exhibits unique physical and chemical properties such as high surface area, enhanced conductivity, and remarkable optical behaviour. These characteristics have opened new possibilities in aquaculture, from improving nutrient absorption and drug delivery to developing advanced biosensors capable of rapid detection of pollutants and pathogens. For instance, gold and tin oxide-based nano sensors can detect pesticides and gases like carbon dioxide and hydrogen sulphide at extremely low concentrations. Silver nanoparticle-coated filters have been shown to reduce fungal infections in fish culture systems, while nanoscale iron-manganese oxides effectively remove arsenic from groundwater. Furthermore, fluorescence-based nano sensors have been successfully developed for the detection of viruses such as White Spot Syndrome Virus (WSSV) in shrimp and ammonia-oxidizing bacteria in aquaculture soils.These nano(bio-)analytical tools, including molecular and biosensing devices, can revolutionize water quality management by enabling rapid detection of harmful contaminants and pathogens directly at the farm level. Their integration into routine aquaculture practices could empower farmers with timely information, ensuring healthier stocks, improved yield, and safer aquaculture products for consumers.The potential of nanotechnology in aquaculture remains largely untapped, but its promise is undeniable. As research progresses, the fusion of nanoscience with bioanalytical systems could mark a paradigm shift, ushering in an era of precision aquaculture where stress detection, mitigation, and sustainability go hand in hand.

DR. ABHIJIT MALLIK
Assistant Professor
School of Fisheries, Techno India University, Tripura

Exploring the Role of Journalism & Mass Communication in Nurturing Growth & Development in Tripura

One of the brightest among the seven sister states in North-eastern India, Tripura is renowned for its inimitable ethnic diversity, social landscape, cultural outlook, political setting, and geographical positioning.Since Tripura received full statehood on January 21, 1972, the state has evolved remarkably in terms of economic growth and socio-cultural multiplicity. Such a remarkable rise can further be accentuated through the study of Journalism and Mass Communication, which can act as a strong medium in highlighting awareness, social unification, and participatory development among the masses. Techno India University has recently launched BA and MA programmes for Journalism and Mass Communication that aim to strengthen thegrowthof local voices, nurture regional identity, and diversify media plurality. This academic discipline plays a significant role in showcasing local stories of the state and making it part of the national conversation. Students studying this subject can emphasize regional topics related to integration, education, cultural heritage, and ecological challenges. Journalism is often regarded as the foundation that upholds democratic values and serves as one of the pillars of democracy. In Tripura, for instance, the media serves as a regulator and an essential medium for disseminating information on government policies and schemes, as well as social and political transformations, given the need for the circulation of accurate and impartial information to the masses.Journalism and Mass Communicationempower individuals to become key communicators who can engage the masses in public discussions and become the agents of social change. It further enables the students to support diversity, challenge stereotypes, and strengthen native voices. With the advent of digital and community media platforms like social media, online portals, and community radio, local journalists and correspondents can reach out to remote communities and provide relevant information.The subject permits the students to communicate efficiently, particularly in a region like Tripura,where local stories can be heard, inclusive development can be implemented, and open exchange of thoughts can be inspired beyond ethnic barriers. Thus, theintroduction of the subject of Journalism and Mass Communication at Techno India University, Tripura holds not just academic value, but it also serves as a medium for emancipation, amalgamation, advancement, and representation.

LOKESH CHAKMA
Assistant Professor
Department of Journalism & Mass Communications,
School of Humanities & Social Sciences,
Techno India University, Tripura

CRAFTING TOMORROW'S CREATORS

As the Dean of the School of Media, Communications, Fine Arts & Design at Sister Nivedita University, I often reflect on how much the landscape of learning has changed. Today's students arrive with an instinctive grasp of technology, a bold sense of individuality, and a refreshing clarity about what they want their future to look like. Working with this new generation has shaped the way we design our programmes and has inspired us to rethink what meaningful, future-ready education truly means.

In our Fine Arts programme, I see how effortlessly students move between mediums-sketchbooks one moment, digital tablets the next. They bring with them a visual language shaped by global exposure, online culture, and a deep desire to express their identity. My aim is to give them both the grounding of traditional techniques and the freedom to experiment with contemporary forms like installation art, digital illustration, and mixed media. Their comfort with blending the old and the new keeps the department vibrant and ever-evolving.A similar shift is visible in the Media programmes, where Artificial Intelligence is not seen as a distant concept but as a natural extension of their creative toolkit. Students explore AI in storytelling, newsroom automation, content generation, and analytics with remarkable ease. What I want to instil in them is not just technical proficiency but an understanding of how to balance innovation with integrity, and technology with human insight.

Our Animation programme thrives on this same spirit of exploration. Students today don't just want to learn software-they want to build entire worlds, create personalities, and craft narratives that resonate. Whether it's through 2D, 3D, VFX, or game design, we encourage them to push boundaries while maintaining a strong foundation in storytelling. In Digital Marketing and AD-PR, we see learners who already understand trends, memes, virality, and digital culture intuitively. Our responsibility is to channel this instinct into strategy-teaching them how to combine creativity with analytics, and ideas with measurable impact.Even in our B-Tech in Fashion Technology programme, the curiosity of this generation shines through. They are eager to explore smart textiles, sustainable materials, and fashion engineering with a seriousness that promises a morethoughtful future for the industry.

What excites me most as an educator is watching how today's students seamlessly merge creativity with technology, ambition with awareness. At Sister Nivedita University, our goal is to guide that spirit, nurture it, and help it grow. The future is being shaped by a generation that is fearless, expressive, and innovative-and it is a privilege to be part of their journey.

PROF. DR. MINAL PAREEK
Dean, *School of Media, Communications, Fine Arts & Design, Sister Nivedita University*
Director, *Digital Media, Techno India Group*

From the Desk of the Vice Chancellor

A Season of Growth and Achievement at Techno India University, Tripura

It gives me immense pleasure to share the remarkable strides Techno India University, Tripura (TIUT) has made in recent months - a period defined by academic expansion, vibrant student engagement, and our continued pursuit of excellence. With every initiative, we continue to move closer to our vision of building a multidisciplinary, inclusive, and forward-looking institution that nurtures both intellect and imagination.The academic session began with Deeksharambh 2025 - the Student Induction Programme, a thoughtfully designed initiative that welcomed new students into the TIUT family. Through a series of lectures, workshops, field visits, and interactive sessions conducted by eminent academicians and industry experts, students were introduced to the values of discipline, curiosity, and lifelong learning.

In alignment with the vision of the National Education Policy (NEP) 2020, TIUT actively participated in the Akhil Bharatiya Shiksha Samagam 2025 held in New Delhi, reaffirming its commitment to multidisciplinary education, research, and innovation. Further strengthening this vision, the university introduced several new schools and academic programmes, including the School of Health Science & Translation Research, expanding opportunities in healthcare, science, and interdisciplinary studies.The quarter also saw the successful continuation of Tripura Medha Ratna 2.0, a flagship outreach initiative honouring 370 meritorious school toppers from across the state - a true celebration of youth, excellence, and aspiration.Campus life thrived with creative and patriotic fervour. The Independence Day celebration at the Techno India Knowledge Campus united the entire academic community in a shared spirit of pride and belonging. Guruvandana 2.0 paid heartfelt tribute to teachers, while TIUT Fiesta 2.0 brought together performances, music, and cultural expressions that reflected the energy and diversity of our students.A particularly inspiring moment was the visit of our Hon'ble Chancellor, Sri Satyam Roy Chowdhury, whose interaction with faculty members and students infused renewed motivation and purpose. His words reminded us that education must always be rooted in values, empathy, and innovation.As we look ahead, I am confident that TIUT will continue to uphold its mission of empowering learners through knowledge, creativity, and social responsibility - growing as an institution where excellence meets opportunity, and learning inspires change.

PROF. (DR.) RATAN KUMAR SAHA
Vice-Chancellor
Techno India University, Tripura

Masterclass with ace fashion designers Abhishek Roy and Debarun Mukherjee, along with the eminent Style Icon and MD of Priya Entertainments Arijit Datta. The program is curated by eminent Image Consultant and Fashion Expert Kuntanil Das and organized by the Department of Fine Arts and Design, Sister Nivedita University as a preparation for launching a new Course in Fashion Technology.

The Inaugural Session of **ICC Innovation Conclave 2025** began with inspiring insights from Satyam Roychowdhury, Chairman of the ICC National Expert Committee on Higher Education & Training and Chancellor of Sister Nivedita University. He emphasised how technology, creativity, and bold ideas are redefining the future of learning. The session set the stage for a powerful dialogue on cognitive empowerment, mental well-being, and fostering a strong ecosystem of innovation, research, and entrepreneurship. Panel Discussion I moderated by Prof. (Dr.) Dhrubajyoti Chattopadhyay, enriched the discourse further, encouraging a future-ready mindset and marking the beginning of a truly transformative journey.

Double trouble beneath the surface: How global warming and emerging contaminants threaten aquatic life

Beneath the shimmering surface of our rivers, lakes and oceans, a hidden crisis is unfolding. Aquatic life, from tiny plankton to mighty whales is under growing pressure from two powerful forces: global warming and emerging contaminants. Each of these threats is dangerous on its own, but together, they form a toxic cocktail that's proving deadly for many aquatic species.'Global warming' is heating up our waters, leading to rising temperatures, melting glaciers and shifts in ocean currents. For aquatic organisms, this means a constant struggle to survive in an environment that's changing too quickly. Warmer water holds less oxygen, making it harder for fish and other creatures to breathe. Some species are forced to migrate in search of cooler habitats, while others simply can't adapt and begin to decline.At the same time,'emerging contaminants'- such as pharmaceuticals, personal care products, pesticides and microplastics are quietly making their way into waterways. These pollutants come from household drains, industrial waste and agricultural runoff, often bypassing traditional water treatment systems. Though present in tiny amounts, they can have major effects. For example, hormones from birth control pills have been found to feminize male fish, disrupting reproduction in entire populations.The real danger lies in how these two stressors interact. Warmer temperatures can increase the toxicity of certain chemicals, making them more harmful than they would be in cooler conditions. For instance, studies show that fishes and amphibians exposed to both high temperatures and pollutants like endocrine disruptors suffer greater damage to their organs, immune systems and reproductive health. The combined stress weakens their ability to survive, grow and reproduce - threatening the balance of entire aquatic ecosystems.Some aquatic organisms attempt to fight back. They may produce stress proteins, change their behavior or even alter their genes to cope. But the rapid pace of environmental change often overwhelms these natural defenses.The stakes are high not just for fishes, amphibians and marine life, but for humans too. We rely on healthy aquatic ecosystems for food, clean water and climate stability. To protect them, we need to act now. Reducing carbon emissions, upgrading wastewater treatment and limiting chemical pollution are key steps toward safeguarding life beneath the surface.

DR. INDRANIL DAS
Assistant Professor
Department of Microbiology & Biotechnology, School of Health Sciences & Translational Research, Techno India University, Tripura

Current Trends in Biofilm Research "Biofilm has a 3D structure and is like Facebook for bugs." - Mara Williams

What are biofilms? Biofilms are complex communities of microorganisms encased in extracellular polymeric substances (EPS) attached to surfaces. The EPS is composed of polysaccharides, proteins, and nucleic acids. It imparts resistance to the bacteria against many antimicrobials. It gives virulence to the bacteria. It remains a focus of intense study because of their implications in medicine, industry, and the environment. In biofilm, the bacteria signals by the process of quorum sensing. Recent research trends are advancing both fundamental understanding and therapeutic control.Understanding the genetic and molecular basis of biofilm formation is central. Researchers are dissecting regulatory networks such as quorum sensing (QS), two-component systems, and EPS biosynthesis pathways. New high-throughout "omics" (genomics, transcriptomics, proteomics) are being used to identify genes and proteins critical to biofilm development, maintenance, and dispersion.Synthetic biology is being deployed to design biological circuits, engineered microbes, and novel peptides that interfere with QS, degrade EPS, or trigger biofilm dispersal. CRISPR-based editing and engineered phage therapies are emerging. Synthetic flavonoids, peptides, and small molecules are being evaluated for disrupting drug-resistant biofilms.Nanoparticles (metal, polymeric, or hybrid) and smart materials are being tailored to penetrate biofilms, deliver antimicrobials, produce photothermal or photodynamic effects, or release gases (e.g. nitric oxide). Functional coatings for surfaces and biomedical devices are designed to prevent adhesion or reduce biofilm formation.

Improvements in imaging (microscopy, confocal, electron, etc.) are allowing fine-scale visualization of biofilm structure and dynamics. Computational and stochastic models (including those incorporating QS mimickers) help predict biofilm behavior. Artificial intelligence (machine/deep learning) is being employed for detecting biofilms (e.g. in medical or industrial contexts) from images or data. There is increasing integration across disciplines-microbiology, materials science, engineering, immunology-and a trend toward translating lab findings into clinical or industrial applications. Focus especially on biofilm-associated infections by multidrug resistant (MDR) pathogens (e.g. the ESKAPEE group), on improving coatings on devices, and on wastewater / environmental remediation.

Dr. Lovely Rahaman
Techno India University, Tripura

EVENTS: Techno India University, Tripura (TIUT)

TIUT Fiesta 2.0

Techno India University, Tripura (TIUT) had the TIUT Fiesta 2.0held at Rabindra Satabarshiki Bhavan Hall, it was graced by

eminent personalities like Shri Kishor Barman, Hon'ble Minister, Department of Higher Education, Panchayat and G.A. (Political), Government of Tripura, Padma Shri Prof. Arunoday Saha, Former Vice-Chancellor of Tripura University, joined as Guest of Honour, and Er. Paramananda Sarkar Banerjee, Chairman, Institution of Engineers (India), Tripura State Centre. The programme was presided over by Prof. (Dr.) Ratan Kumar Saha, Hon'ble Vice-Chancellor, TIUT, and Mr. Kunal Ganguly, Director, Techno India Group, Kolkata; Dr. Dibakar Deb, Principal, Techno College of Engineering Agartala; Prof. (Dr.) Ajay Krishna Saha, Dean of Academic Affairs; and Prof. (Dr.) Dilip Sarkar, Dean, School of Humanities and Social Sciences & Dean of Students' Welfare.

Guruvandana 2.0

Techno India University, Tripura (TIUT) observed Guruvandana 2.0 which was graced by the Hon'ble Vice-ChancellorProf. (Dr.) Ratan Kumar Sahaalongside Prof. (Dr.) Ajay Krishna Saha, Dean of Academic Affairs; Prof. (Dr.) Dilip Sarkar, Dean, School of Humanities and Social Sciences & Dean of Students' Welfare; and Dr. Shiladitya Munshi, Dean In-Charge, School of Engineering and Architecture. All faculty members and students of TIUT joined together to commemorate the day with joy and reverence.The celebration featured a series of vibrant student-led performances, including songs, dances, and short skits dedicated to the teachers, symbolizing the spirit of Guru-Shishya Parampara. Interactive games and fun sessions added a lively note to the programme, creating a relaxed and affectionate environment that strengthened the bond between teachers and students.

TIUT at Akhil Bharatiya Shiksha Samagam 2025, New Delhi

Techno India University, Tripura (TIUT) marked a proud moment of academic representation at the Akhil Bharatiya Shiksha Samagam (ABSS) 2025at New Delhi. The Samagam commemorated five years of the National Education Policy (NEP) 2020, a landmark framework that continues to redefine India's higher education

landscape through innovation, inclusivity, and multidisciplinary learning. It was inaugurated by Shri Dharmendra Pradhan, Hon'ble Union Minister of Education, Government of India, who emphasized the transformative journey of NEP 2020 and its role in shaping India's "Viksit Bharat" vision by 2047. It brought together eminent policymakers, Vice-Chancellors, academicians, and education leaders from across the country for insightful discussions on the policy's progress and implementation.Prof. (Dr.) Ratan Kumar Saha, Hon'ble Vice-Chancellor of TIUT, represented the university at this significant forum, engaging with national dialogues on the evolving educational priorities of the country.

Medha Ratna 2.0

In a proud continuation of its mission to celebrate merit and nurture excellence, Techno India University, Tripura (TIUT) organised the second edition of Tripura Medha Ratna - a flagship initiative dedicated to recognising the achievements of Class XII toppers from schools across the state. This two-phase felicitation series honoured 370 outstanding students from 145 schools spanning four districts Gomati, Sepahijala, North Tripura, and Unakoti, who exemplify the spirit of hard work, dedication, and aspiration.

Deeksharambh 2025

Techno India University, Tripura (TIUT) inaugurated Deeksharambh 2025 - the Student Induction Programme, marking the formal commencement of academic life for its newly admitted students across AICTE and UGC-approved programmes. The first phase, dedicated to students of AICTE-approved programmes, was graced by distinguished guests including Er. Paramananda Sarkar Banerjee, OSD to the Hon'ble Chief Minister of Tripura; Prof. Sarat Kumar Patra, Director, NIT Agartala; and Prof. Priyasankar Chaudhuri, Ombudsperson, TIUT. The dignitaries motivated the students to pursue technical excellence, cultivate discipline, and contribute meaningfully to society through integrity and innovation.The second phase was inaugurated the induction for students of UGC-approved programmes. The ceremony began with the lighting of the inaugural lamp and a soulful invocation song, setting an atmosphere of inspiration and reflection. The event was honoured by the presence of Shri Animesh Debbarma, Addl. Secretary & Director, Department of Higher Education; Dr. Phani Bhusan Jamatia, Director, Department of Agriculture and Farmers' Welfare; Shri Anil S. Kotmire, General Manager, NABARD; Prof. (Dr.) H.K. Pratihari, Director, National Forensic Sciences University (Tripura Campus); Prof. (Dr.) Priyasankar Chaudhuri, Ombudsperson, TIUT; and Dr. Dibakar Deb, Principal, TCEA.

Bridging Heritage & Higher Learning: The Promise of Indian Knowledge Systems at TIUT

A society that detaches itself from its heritage loses the foundation of its identity and the wisdom that sustains its future. A prolonged history of colonization and cultural disruption, along with its influence on educational practices, has distanced us from our own ancient epistemic heritage. However, it is never too late to reconnect with one's roots and rediscover a rich literary heritage that dates back to ancient times. As India moves towards realizing the vision of Viksit Bharat 2047, the integration of curricular practices to reconnect learners with our ancient knowledge traditions is a pressing need of the present day. In recent years, Higher Education in India has been undergoing a gradual yet significant transformation. The introduction of National Education Policy (NEP) 2020 has opened the vista for re-establishing a connection with our timeless intellectual traditions with the introduction of Indian knowledge System (IKS) courses across disciplines. The University Grants Commission (UGC) has mandated that IKS courses should comprise of at least 5% of the total programme credits in every curriculum, which is a very important step towards integrating India's own epistemic heritage into modern learning practices.

With a firm belief in the principles of IKS, the Department of English, SHSS of Techno India University, Tripura (TIUT), has successfully introduced IKS courses at the undergraduate and postgraduate levels of the programmes offered by the department. The goal is to ensure that students approach literature not just as a Western import, but as a global dialogue enriched by India's classical imagination.At the undergraduate stage, classes like Ancient Indian Epics and Ancient Indian Folklore in Translation engage students with the Mahabharata, Ramayana, and local stories as vibrant sources of philosophy, ethics, and aesthetics, enabling them to view literature as a connection between wisdom and artistry. At the postgraduate level, courses such as Indian Classical Dramaturgy and Indian Poetic Traditions familiarize students with Bharata's Natyashastra and traditional theories of rasa, dhvani, and alamkara, allowing them to critically examine how historical aesthetic and poetic structures continue to influence contemporary literary, theatrical, and cultural expressions.Beyond the confines of classrooms, the department regularly organizes Special Lectures on Indian Knowledge Systems, inviting distinguished academicians to the campus. A recent talk by Prof. Somdev Banik, Professor, Department of English, Tripura university, ignited engaging discussions on the ways in which IKS provides different frameworks for knowledge, creativity, and innovation.For students, these classes have created new avenues of thinking - linking historical writings with modern situations and fostering assurance in India's unique intellectual language. Adhering to the UGC's 5% IKS credit framework, TIUT encourages a learning environment where tradition blends with innovation, reinforcing the notion that education involves not only learning from the external world - but also understanding one's own world.

AGNIBESH CHAKRABARTI
Assistant Professor
Department of English, School of Humanities & Social Sciences, Techno India University, Tripura

Department of Chemistry: Sister Nivedita University

"If you're passionate about discovery, innovation, and shaping a sustainable future - SNU Chemistry is where your story begins."

The Power of Chemistry: Chemistry is the science of matter - its structure, properties, and transformations - revealing how atoms and molecules form everything around us. From medicines to materials, from energy to the environment, chemistry drives every major scientific advancement.It is also one of the six Nobel Prize disciplines, symbolizing its global importance and recognition as one of humanity's highest scientific honours. Studying chemistry means joining a legacy of thinkers and innovators who have shaped our modern world.

Why Study Chemistry at SNU?To study chemistry is to explore how the universe works - and to learn how to improve it. At Sister Nivedita University (SNU), we nurture innovators and problem-solvers who apply chemistry to address real-world challenges.Our research-oriented and continuously evolving curriculum encourages curiosity, creativity, and critical thinking. Students gain hands-on experience with modern instrumentation, computational tools, and advanced laboratory techniques. Every class, experiment, and project builds confidence, independence, and a lifelong passion for discovery.

Divisions of Chemistry: Our curriculum encompasses all major branches of chemistry - Inorganic, Organic, Physical, and Analytical Chemistry - interconnected to provide a holistic understanding of the molecular world and its limitless possibilities.

Our Mission and Curriculum Design: Our mission is to inspire excellence through research-driven education. The Chemistry Department at SNU consistently updates its curriculum to include emerging fields such as green chemistry, polymer science, nanotechnology, and environmental science.We offer Undergraduate (B.Sc.), Postgraduate (M.Sc.), and Doctoral (Ph.D.) programs, guided by a team of dedicated faculty and research mentors. Our Ph.D. scholars and research students contribute to cutting-edge projects and high-impact publications.All postgraduate students undertake internships at reputed research institutes during their fourth semester, gaining valuable hands-on exposure. Two of our students are currently involved in advanced nanoscience-based research at SNU in collaboration with the Nordische Innovation Centre, reflecting our commitment to interdisciplinary and global research excellence.Students also receive rigorous mentoring to excel in NET and GATE examinations, paving their way to premier research institutions and industries worldwide.

Faculty and Research Excellence: The Chemistry Department at SNU is led by a team of distinguished Ph.D. faculty, most with international postdoctoral experience. Their expertise and global perspective bring world-class teaching and mentorship to every classroom and lab.

Our faculty's achievements include:Three major research projects funded by DST and CSIR, Numerous publications in high-impact international journals, Active interdisciplinary collaborations across diverse scientific domains, Our Junior Research Fellows (JRFs) are currently engaged in three flagship projects:

Development of RNA Binding Amiloride Ligands Targeting Hepatitis C Virus

Development of a Free-Standing Polymeric/Ceramic FO Membrane for Drinking Water Purification

Palladium-Catalyzed Selective Synthesis of Novel Silicon-Containing Cyclic Compounds

Our faculty members are more than educators - they are mentors who inspire innovation, critical thinking, and independent research. Through international collaborations and student exchange programs, we ensure our students experience global exposure and opportunities.

Seminar Series and Academic Engagements: The Department of Chemistry at SNU hosts an enriching series of seminars, webinars, and academic events that foster scientific curiosity and collaboration. Highlights include Scientific lectures by eminent speakers, workshops on hands-on-training on different instruments, Science Day Celebrations, and World Cancer Day awareness programs. Our department has also welcomed Japanese delegates and Prof. (Dr.) Antonio Largo Cabrerizo, Vice Chancellor, University of Valladolid, Spain, to explore international research partnerships. Events like the Chemistry Olympiad, held on Acharya Prafulla Chandra Ray's birthday, inspire innovation and passion for chemistry among young minds.

Student Placement and Achievements: Our students consistently excel beyond academics. Many graduates have secured placements in reputed companies across the chemical, pharmaceutical, and materials industries, while several are pursuing Ph.D. programs at esteemed institutions in India.This outstanding record showcases the department's dedication to both academic depth and career readiness.

Boundless Career Opportunities: A degree in chemistry from SNU opens doors to diverse and rewarding global careers in:Pharmaceuticals and Biotechnology, Materials and Polymer Science, Energy and Environmental Technology, Forensic and Food Chemistry, Academia and Research Institutions. The dye industry is another major chemical sector where chemistry thrives - particularly organic chemistry, which creates coloured compounds used in textiles, inks, plastics, and other materials.

Graduates can become Analytical Chemists, Research Scientists, Quality Controllers, Materials Technologists, or R&D Managers, with endless opportunities to contribute to science and society.Join the World of Chemistry at SNU. With world-class faculty, modern laboratories, and globally aligned research programs, Sister Nivedita University stands as a hub of scientific excellence in Eastern India.

At SNU Chemistry, learning goes beyond the classroom - it becomes a journey of discovery, creativity, and innovation.Discover. Explore. Innovate.SNU Chemistry - where your scientific story begins.

DR. PAPIYA MAJUMDAR
Associate Professor & HOD (Acting)
Dept. of Chemistry, Sister Nivedita University

Department of Applied Nutrition and Dietetics

Given the rising prevalence of non-communicable diseases (NCDs) in India, concerns about food and nutrition security, the changing food industry, and the expansion of the healthcare sector, nutrition and dietetics are crucial, particularly in the wake of COVID-19. The Department of Applied Nutrition & Dietetics at Sister Nivedita University (SNU) represents an emerging vibrant centre of excellence in the field of nutritional sciences and dietetics education in eastern India. Located in Newtown, the department falls under the School of Health Science & Translational Research and buzzes with over hundred undergraduate and postgraduate students.

Academic Programmes and Curriculum

The department offers a four-year B.Sc. (Applied Nutrition & Dietetics) with / without research degree, a two-year M.Sc. (Applied Nutrition & Dietetics) degree, and even a PhD option in the field. For the B.Sc. programme, eligibility is based on 10?+?2 (Science stream or other stream preferably having Nutrition / Life-science) with typically 60?% marks in the last qualified examination. Meanwhile, for the M.Sc. programme the eligibility is a relevant bachelor's degree (in nutrition/dietetics/life-sciences related field) with a minimum required aggregate (i.e., 55?%).

The detailed syllabus for the B.Sc. and M.Sc. programme are mapped with courses such as Advanced Nutritional Science, Sports Nutrition, Clinical Dietetics, Community Nutrition, Food Science & Technology, and Research Methods among others. The department also appears to provide internship and experiential learning opportunities - essential in preparing students for roles of academician, researcher, dieticians, nutritionists, food industry analysts, food journalist, and public health nutritionists. Through this curriculum the department emphasises blending rigorous scientific grounding discoveries in biochemistry, metabolism, and, food science with applied skills in diet planning, therapeutic nutrition, public health& community nutrition, and industry practices. The department also consider enhancing soft-skills training, entrepreneurship in nutrition (e.g., start-up dietetics consultation), and certifications in emerging areas like nutrigenomics.

Faculty and Infrastructure

The department's strength lies in its qualified faculty and the institute'sinfrastructural support. According to the university's faculty list, the department includes Assistant Professors who hold advanced degrees (M.Sc, Ph.D.) along with technical and laboratory staffs supporting practical teaching in food and nutrition laboratories. This indicates the department's commitment to hands-on work alongside theory.

Infrastructure-wise, the department has dedicated laboratories, practical sessions, internships, field outreach programs and research-oriented components. For instance, both the B.Sc.and M.Sc. courseshave "hands-on Practical sessions through internships in several Govt. and private hospitals, healthcare centres, NGOs and the food industry as part of training. Such features reflect the department's aim to give students not just conceptual knowledge but real-world exposure in nutrition and dietetics.To mark its social relevance and commitment to student training, the department has signed MoU with institutes like IBRAD (Indian Institute of Bio - Social Research and Development) and ION (Institute of Nutrigenetics) and has academic collaboration with other NGOs and Institutes/Industries.

Career Prospects and Industry Relevance

Graduates from the department are equipped to pursue careers such as clinical dietician in hospitals, public health/nutrition officer in government or NGO sectors, nutrition consultant for food industry or wellness brands, sports nutritionist, food product analyst or researcher. The detailed syllabus with courses such as clinical dietetics and research methods positions students well for both employment and research paths. Several students from the department are now placed at renowned private hospitals and food industries; R.N. Tagore and Nestle to name a few.

Strengths and Key Features

One of the notable strengths of the department is its alignment of education with applied and translational goals. Nutrition and dietetics as a field demands not only theoretical expertise but also the ability to implement diet plans, assess nutritional status, engage with public health programmes, and interface with food industry and hospitals. For aspirants seeking to engage in nutrition education in eastern India, this department presents a modern, application-focused pathway in the dynamic field of food, nutrition, health and wellness. The department's nomenclature - Applied Nutrition & Dietetics - itself emphasises application and real-life relevance rather than purely academic theory.

DR. MOUMITA DAS
HOD, *Department of Nutrition, Sister Nivedita University*

The Journalism & Mass Communication Department of Sister Nivedita University, in association with Cyber Peace Foundation, conducted a **Cyber First Responder: AI Safety Workshop** for young adults. Students from Techno International New Town actively participated and gained valuable insights into cyber safety and AI awareness.

History Department of Sister Nivedita University study trip to the **Indian Museum and Bongopex 2025** - India Post's annual Philately Exhibition. The exhibition "Epigraphic Episodes: Echoes, Engravings, and the Essence of India"

covered a wide range of epigraphic evidence, some going back 5000 years. From the Harappan Civilization of the Bronze Age to the Pala-Sena Inscriptions, the students were enthralled with the treasures on display.

The **Departments of Biotechnology and Microbiology** jointly hosted the International Seminar on **Transformative Advances in Cancer Biology** bringing together global experts to explore cutting-edge molecular insights and biomedical innovations.

The department of Sociology, Sister Nivedita University presented **Renaissance 3.0.**

Emerging Mental Health Challenges in India: The Urgent Need for Expanding Psychology Education and Workforce Development

In recent years, emerging mental health issues in India have become a matter of urgent national concern, particularly among young adults and students in higher education. The complex interplay of academic pressure, socioeconomic instability, and the prolonged psychological aftermath of the COVID-19 pandemic has led to a noticeable rise in anxiety, depression, burnout, and emotional distress. The intense competition in education and employment, coupled with uncertainty about the future, has left many young people vulnerable to psychological strain. Unfortunately, the persistent social stigma surrounding mental illness continues to prevent individuals from seeking timely help, thereby deepening the crisis. This scenario highlights the immediate necessity of expanding access to mental health services and building a strong cadre of trained psychology professionals across the country.

One of the most critical barriers to effective mental health care in India is the acute shortage of trained professionals. The country faces a severe deficit of clinical psychologists, counselors, psychiatrists, and psychiatric social workers, which has resulted in an enormous treatment gap. The National Mental Health Survey (2015-16) revealed that nearly 80% of people suffering from mental health conditions in India do not receive any professional treatment. The imbalance in workforce distribution further aggravates the situation-while most mental health professionals are concentrated in urban centers, rural and semi-urban areas remain grossly underserved. This uneven distribution of care means that millions of individuals with diagnosable mental health conditions are deprived of even the most basic interventions. Consequently, India's public mental health infrastructure struggles to provide preventive, diagnostic, and therapeutic services effectively.

To address this challenge, there is a pressing need to focus on strengthening human resource development through quality psychology education at both the undergraduate and postgraduate levels. At the undergraduate level, psychology graduates form the foundation of community-based mental health promotion. Equipped with a strong theoretical understanding of human behavior and basic counseling skills, these graduates can play a pivotal role in early identification of emotional and behavioral problems. They can contribute to mental health awareness, school-based counseling, workplace well-being programs, and primary healthcare outreach, particularly in settings where specialist services are limited. By integrating such professionals into community and institutional frameworks, the country can significantly enhance early intervention and reduce the long-term burden of untreated mental health conditions.

At the postgraduate level, the role of psychology-trained professionals becomes even more specialized. Clinical psychologists and counseling psychologists, with their advanced training, are indispensable in providing in-depth psychological assessment, diagnosis, and evidence-based interventions for a wide range of mental disorders. Their expertise extends beyond individual therapy to include trauma-informed care, neuropsychological assessment, rehabilitation, and crisis management. Furthermore, postgraduate professionals contribute to research, policy formulation, and training of new mental health workers-functions that are crucial for sustainable development of the mental health ecosystem. Therefore, expanding postgraduate psychology programs, increasing the number of clinical psychology seats, and ensuring quality regulation and accreditation are essential measures for building a robust and ethically grounded workforce.

In the era of digital transformation, mental health professionals trained in psychology are also essential for integrating technology with therapeutic care. The rise of telepsychology, online counseling, and AI-assisted therapy platforms has opened new pathways for delivering mental health services beyond traditional clinical settings. These digital interventions are particularly effective in overcoming barriers of geography, stigma, and cost, thus reaching youth, women, and marginalized communities more efficiently. However, their success depends heavily on the involvement of trained psychologists who can ensure that such innovations remain culturally sensitive, scientifically valid, and ethically responsible. Hence, developing digital competency as part of psychology education can significantly strengthen India's capacity for scalable and inclusive mental health care.

Government initiatives such as the National Mental Health Programme (NMHP), District Mental Health Programme (DMHP), andTele-MANAS have shown considerable promise in expanding mental health outreach. However, their success is largely contingent upon the availability of trained professionals capable of implementing these programs effectively. While task-shifting approaches-where allied healthcare workers are trained to deliver basic psychological support-are valuable, they cannot replace the specialized knowledge and clinical expertise that psychology graduates and postgraduates bring. Thus, government and academic institutions must invest in creating attractive career pathways, scholarships, and incentives to retain these professionals, particularly within public health systems where they are most needed.

Equally important is the need to improve mental health literacy among the general population. Stigma reduction and community education campaigns can play a transformative role in changing public attitudes toward mental illness. Trained mental health educators-often psychology graduates and postgraduates-can lead these initiatives through schools, universities, workplaces, and community organizations. By promoting empathy, self-awareness, and early help-seeking, such efforts can substantially reduce discrimination and foster a more supportive social environment for those struggling with psychological distress.

In conclusion, India's growing mental health crisis calls for a comprehensive, multi-level strategy centered on strengthening psychology education and workforce development. Graduate-level psychology programs should focus on preparing individuals for preventive, community-based, and early intervention roles, while postgraduate training must emphasize specialized clinical expertise, research, and leadership in policy and program development. Expanding the number of training institutions, ensuring quality standards, and integrating mental health professionals into both traditional and digital healthcare systems are essential steps toward closing the nation's vast treatment gap.

By building a well-trained, ethically committed, and technologically adaptive mental health workforce, India can not only respond to the current mental health challenges but also prepare for future ones. This investment in psychology education and professional development is not merely an academic priority, it is a public health imperative that will contribute to a more resilient, emotionally balanced, and mentally healthy society.

DR. ANINDITA MUKHERJEE
Clinical Psychologist (RCI), Head
Dept. of Psychology, Sister Nivedita University

Sister Nivedita University warmly welcomed esteemed delegates from Japan.

On 12th November 2025, SNU had the honour of hosting **Dr. Yasutomo Nasu**, the President of Okayama University, and **Mr. Hiroshi Fakuda**, the Director General of the Citizens' Cooperative Bureau, Okayama City, along with other important guests from Japan. This visit marks a significant step towards fostering academic collaboration, cultural exchange and global partnerships between **Sister Nivedita University and Okayama University**.

On 13th November, **Dr. Yasutomo Nasu** was conferred with the Mou Roychowdhury Excellence Award 2025 in the field of Academic Leadership.

From Curiosity to Creation: Building the Future of Biosciences at SNU

Established in 2017, the Departments of Biotechnology and Microbiology at Sister Nivedita University (SNU) began their journey with a vision to address the rising global need for advanced education, innovation, and research in the life sciences. Over time, they have developed into vibrant academic and research hubs, dedicated to nurturing future scientists, innovators, and thought leaders capable of contributing to society through science and sustainability.From modest beginnings with a small group of dedicated faculty and students, the departments have grown into thriving centres of excellence. Rooted in SNU's vision of inclusiveness, creativity, and continuous innovation in education, they are committed to fostering holistic development - empowering students to think critically, work ethically, and explore beyond traditional scientific boundaries.

Academic Growth and Programs

Over the past seven years, the Departments of Biotechnology and Microbiology have expanded significantly in both scope and reputation. They now offer a comprehensive range of Undergraduate, Postgraduate, and Ph.D. programs, each designed to combine theoretical depth with practical experience.

A significant milestone was achieved with the introduction of the B.Tech. in Biotechnology program, which received an exceptional response, enrolling 110 students in its very first batch. This reflects the departments' growing academic strength and the increasing demand for skilled professionals in biotechnology and allied fields.Today, the departments are home to a vibrant community of students mentored by experienced faculty who blend teaching with active research. From the third semester at the undergraduate level and the first day for postgraduate students, learners are encouraged to engage in project-based research. This early exposure cultivates scientific aptitude, problem-solving ability, and confidence in handling modern laboratory techniques.

Research Facilities and Projects

From a single laboratory at inception, the departments now boast six state-of-the-art laboratories equipped with advanced instruments that support cutting-edge microbiological, molecular, biochemical, and analytical research. This modern infrastructure not only enhances classroom learning but also enables high-quality experimental work aligned with global scientific standards.Research at the departments is strengthened through multiple externally funded projects. In addition to prestigious DBT projects, the departments are currently implementing two SERB-funded projects and the RISE project funded by the Government of West Bengal. These initiatives underscore SNU's growing recognition as a center for impactful bioscience research and its active contribution to addressing challenges in health, environment, and biotechnology.

Academic and Research Activities

Regular academic events form an integral part of departmental life. The departments organize a variety of national and international seminars, workshops, and conferences, providing platforms for knowledge exchange and professional growth.

Recent academic initiatives include Hands-on Workshops on Molecular Biology Techniques, Fluorescence Imaging and Image Analysis, Biostatistics, and Iron Homeostasis Pathways in Plants, along with Biosafety Awareness webinars. These training programs provide students with valuable hands-on exposure to fundamental and advanced scientific techniques.

On a larger scale, the departments successfully hosted SNU-BioTalk 2024 and 2025, two international conferences on Plant Biology in the Post-Genomic Era and Symphony of Cellular Signals in Metabolism and Immune Response, respectively. Additionally, the National Symposium in collaboration with CCSAHDR-Kolkata Chapter (2024 & 2025) further strengthened academic networking and interdisciplinary collaboration.

Student Achievements and Alumni Success

The departments take immense pride in their students' consistent achievements. Graduates have secured positions in renowned organizations such as Nestlé and Tata Consumer Products, while several alumni have pursued higher education and research at prestigious institutions including Texas Tech University (USA), University of Edinburgh (UK), University of Bremen (Germany), University of Bologna (Italy), IIT (ISM) Dhanbad, and VIT University.

Students have also presented their research at leading Indian institutions such as Presidency University, St. Xavier's College, IISER Kolkata, Jadavpur University, and IIT Guwahati, reflecting the departments' emphasis on cultivating scientific communication and research excellence.Beyond academics, the departments encourage holistic growth. Students have represented SNU in the 35th Inter-University East Zone Youth Festival organized by AIU in collaboration with SNU (2024-25) and won top honors in the Red FM Tashanbaj competition in 2025, showcasing their versatility and creativity beyond the laboratory.

Research Excellence and Publications

Faculty members in both departments are actively involved in research across domains such as microbial biotechnology, molecular genetics, plant-microbe interactions, and environmental microbiology. Their research outputs have been published in reputed international journals like Springer Nature, Nature Genetics, Journal of Human Genetics, and Wiley, contributing to the global bioscience knowledge pool and elevating the university's research profile.

By integrating research into the teaching process and encouraging student participation, the departments ensure that learners gain a true researcher's mindset - inquisitive, analytical, and ethically responsible.

Looking Ahead

Guided by the mission and vision of Sister Nivedita University, the Departments of Biotechnology and Microbiology remain committed to academic excellence, innovation, and inclusivity. They continue to evolve as centres where scientific curiosity meets social responsibility - fostering an environment that nurtures creativity, collaboration, and sustainability.With their strong academic foundation, modern research facilities, and a passionate community of scholars, the departments are shaping the next generation of researchers, innovators, and leaders who will drive the future of biotechnology and microbiology - not just in India, but across the world.

DR. SOMSUBHRA THAKUR CHOUDHURY
Associate Professor and Head, *Department of Biotechnology, Sister Nivedita University*

SNU's JMC Dept.is the premier launchpad for tomorrow's media leaders

Choosing a university department isn't just about selecting courses; it's about defining the launchpad for your professional life. For aspiring professionals targeting the dynamic world of traditional news media, electronic media, digital platforms, PR, advertising, social media marketing, content creation, photography, editing, radio, podcasting, creative content creation, ORM, and CRM (in collaboration with Salesforce), the Journalism and Mass Communication (JMC) Department at SNU stands out as a singular, future-focused institution in Eastern India. This isn't merely a place of learning; it's a robust ecosystem meticulously designed to forge industry-ready leaders, guided by an unyielding philosophy that prioritises application, rigorous industry integration, and pedagogical excellence.

A curriculum built for the 21st-century media landscape

The modern media industry demands practitioners who are both versatile and technically proficient. Recognising this seismic shift, the JMC Department offers not only the foundational BA and MA in Journalism and Mass Communication but also a truly unique and specialised offering: the MA in Advertising, PR, and Digital Communications. SNU holds the distinction of being the only university in Eastern India to provide this specific Master's program, which dives deep into essential, cutting-edge subjects.The curriculum is not just broad; it is a meticulous integration of core and emerging disciplines. Students master modules on Social Media Marketing, Customer Relationship Management (CRM) with Salesforce, Creative Economy, and Entrepreneurship. Furthermore, the program comprehensively details PR, Marcom, Corporate Communication, Online Reputation Management (ORM), Crisis Handling, Branding, Copywriting, Visualising, Layout and Design, Photography, and Media Management-covering the full spectrum of AD Management. This strategic, detailed focus ensures that graduates are fluent in the language of modern business and digital engagement. They are not merely observers of the digital revolution but active participants ready to shape the evolving narrative.

The unwavering power of practice

At the heart of the SNU JMC experience is a profound, non-negotiable commitment to application and practical work. Theory, while robust, is always complemented by intense, hands-on exposure, effectively transforming classrooms into functional newsrooms and studios.The department's flagship practical unit is the SNU Chronicle, a fully functional digital streaming unit. This is far more than a campus club-it's a live laboratory where students get immediate, real-world experience in studio set-up, camera handling, news gathering, covering, editing, writing, and uploading news content. This authentic workflow provides invaluable experience, bridging the gap between academic knowledge and professional expectations. A testament to this practical grounding is that the JMC Department serves as the official Digital Partner to the International Kolkata Book Fair, an exposure level that few other academic institutions can provide.Complementing this, the SNU Post, a dedicated digital blog, hones students' writing and editorial skills for online consumption. Beyond news production, the department nurtures holistic media professionals through cultural and soft-skill initiatives: Pagemark, a book readers club, hosts discussions with authors and practical writing workshops; and Mic-Up, the theatre club, builds crucial self-confidence, stage presence, and a deep appreciation for India's cultural depth-all indispensable skills for any public-facing career.

Unmatched infrastructure and industry interface

No cutting-edge program can thrive without world-class facilities. SNU's JMC Department boasts its single biggest asset in its infrastructure. The facilities are truly exceptional, including a full audiovisual studio with a Production Control Room (PCR), providing a professional-grade set-up for electronic media production. Furthermore, a dedicated audio studio with a complete audio suite caters to the burgeoning fields of radio and podcasting. With a state-of-the-art MacLab and smart classrooms, the department ensures that students have access to the best technical tools available, empowering them to produce industry-standard work from day one.Crucially, the program mandates a close industry-academia interface. This commitment is institutionalised through regular master classes with industry experts, bringing contemporary professional wisdom directly into the learning environment. This constant, vital dialogue ensures the curriculum remains relevant and ensures students are actively networking with the professionals who will soon be their colleagues. To give students even greater academic exposure, the department holds an Annual Media Conclave where research papers are presented by professors, research scholars, professionals, and media persons, turning those days into a hotbed for the exchange of academic ideas, with participation from across the country.

Excellence in pedagogy and mentorship

While infrastructure and curriculum are vital, the true, indispensable strength of the department lies in its human capital. The JMC faculty is an eclectic mix of vast industry experience and deep academic depth. These are not just teachers; they are mentors, serving as a true guide and philosopher to the students. Their diverse backgrounds ensure that students receive rigorous theoretical grounding alongside practical, battle-tested advice.This wealth of experience is personified by faculty members such as Prof. Dr Minal Pareek, a veteran news person, theatre practitioner, and author; Prof. Saikat Majumdar, with over 20 years in industry; Dr Jhumur Dutta Gupta, who brings 15 years in news media; and Prof. Arindam Basu, with 25 years in media with five authored books. The faculty is further strengthened by professionals like Prof. of Practice Santosh Kopisetti, who brings 20 years of expertise from the advertising sector.The department's pedagogical approach is rigorously focused on excellence in education, strictly following the principles of Outcome-Based Education (OBE) and the UGC Vision 2020 recommendations. This ensures that every module, every project, and every interaction is designed with a clear, measurable professional outcome in mind.

In essence, the JMC Department at SNU is more than an academic unit; it is an incubator. They don't simply prepare students for the industry; they craft the future of the country with batches of students readied to make India proud. For anyone serious about a dynamic and impactful career in the media and communication sector, the choice is clear: SNU offers the infrastructure, the curriculum, the practical exposure, and the mentorship required to transition from a student to a successful, impactful professional.

ARINDAM BASU
Assistant Professor
Mass Communication & Journalism Department
Sister Nivedita University

DOCTORS' COLUMNS

Watering or Tearing of Eyes

Watering or tearing of eyes can be very inconvenient for the patients. Tearing of symptoms can range from mild intermittent watering to constant profuse tearing.There are many causes of tearing. However, it can mainly be because of two reasons:

1. Epiphora
Often multifocal can be because of a non- patent lacrimal outflow pathway, others, such as eyelid and adnexal causes, corneal and ocular surface pathologies can also cause watering.

2. Hyperlacrimation
Excessive watering is due to irritation of the corneal surface, dry eye, corneal abrasion, orcorneal foreign body.

Obstruction of the excretory lacrimal system

a) Anatomical (any structural pathology in the lacrimal outflow pathway that obstructs tear passage)
b) Functional (where the lacrimal outflow pathway is anatomically normal with a patent syringing, but there's a failure of the lacrimal pump mechanism)
c) Environmental factors and allergies can also result in watery eyes.More seriously, infection can be the reason why the eyes won't stop tearing up.

Remedies for watery eyes

Some of the measures mentioned below are very effective for the treatment of watery eyes
a) Eye drops
b) Treatment for allergies, infection
c) Warm compress
d) Surgical procedures - DCR - Dacryocystorhinostomy (with or without stent)

As people age, the tear ducts often narrow (acquired dacryostenosis). Such narrowing is a common cause of unexplained watery eyes in older people. However, complete blockage of the tear duct is also possible. Rarely, a tumour of a lacrimal sac can cause watering.

Surgical procedure:

The treatment of a tear duct obstruction is typically surgical and ranges from simply stenting the system to DCR(Dacryocystorhinostomy)
1.DCR surgery is basically a tear duct bypass procedure
2.DCR surgery reroutes the tear duct around the blockage and creates a new pathway for the tear to flow.
3.Temporary Stent can be placed during DCR surgery and is removed after complete healing (may be after 2/ 3 months).

DR. MADHUSMITA BEHRA
MS
Consultant Ophthalmologist,
Rotary Techno Netralaya

The relationship between the Eyes and the Heart in human health is profound and often described by doctors as "The eye is a window to the heart and the rest of the body's vascular system."

Because the blood vessels at the back of the eye (the retina) are the only place in the body where a doctor can directly view your live, unencumbered arteries and veins, they provide crucial information about your cardiovascular health and overall lifestyle.

Here are the key aspects of this relationship in a human lifestyle:

1. The Eye as a Diagnostic Tool for the Heart: Many heart-related conditions are first detected during a routine, dilated eye exam. Changes in the tiny, delicate blood vessels of the retina are often the earliest visible signs of systemic disease.

Heart/Vascular Condition: What the Eye Doctor Sees

High Blood Pressure (Hypertension) / *Hypertensive Retinopathy:

Narrowing, bending, or kinking of the retinal arteries; small hemorrhages; or swelling of the optic nerve. These signs can be present before a patient is formally diagnosed with high blood pressure.

High Cholesterol / Arcus Senilis:

A gray or white ring around the cornea, especially in younger people, can indicate high cholesterol levels.

Atherosclerosis (Hardening of Arteries) / Blocked Arteries/Eye Stroke: Small cholesterol or fat deposits (emboli) are sometimes seen lodged in the retinal arteries, which may originate from plaque buildup in the carotid arteries or the heart. This is a severe warning sign of a potential stroke or heart attack.

Diabetes/ Diabetic Retinopathy: Leaky, ballooning, or new, abnormal blood vessels in the retina. Since diabetes is a major risk factor for heart disease, identifying it in the eye is critical for overall cardiovascular prevention.

Increased Stroke Risk | Retinal Artery/Vein Occlusion: Blockage of blood flow to the retina, often called an 'eye stroke'. This indicates a systemic blood flow problem and is a strong predictor of a future stroke or other major cardiovascular event.

2. Shared Risk Factors and Lifestyle Connection: The diseases of the heart and the diseases of the eye often share the same root causes and are therefore mitigated by the same healthy lifestyle choices.

Shared Risk Factor / Impact on Heart / Impact on Eye

Smoking: Leading cause of heart disease, stroke, and high blood pressure/ Increases risk for Age-Related Macular Degeneration (AMD), cataracts, and retinal vessel damage.

Poor Diet/Obesity: Leads to high cholesterol, high blood pressure, and type 2 diabetes. Increases risk for Diabetic Retinopathy and AMD.

Lack of Exercise: Contributes to poor circulation and cardiovascular disease. Reduces oxygen and nutrient delivery to the retina, harming eye health.

3. Anatomical and Functional Connection

Both the heart and the eyes are highly dependent on an uninterrupted and healthy blood supply:

Circulation: The heart must constantly pump blood to the eyes, which requires a rich, steady supply of oxygen and nutrients to maintain the high metabolic rate of the photoreceptors. Any dysfunction in the heart's pumping ability (e.g., due to heart failure) or the quality of the blood (e.g., due to plaque) will immediately affect the sensitive tissues in the eye.

Microvasculature: The blood vessels in the retina are among the smallest in the body. They are often the first to be damaged by systemic diseases like hypertension and diabetes, making the eye a key early warning system.

In conclusion, maintaining a heart-healthy lifestyle, including a balanced diet, regular exercise, and avoiding smoking, is one of the most effective ways to preserve both your cardiovascular health and your long-term vision.

DR. SANJIB K. PANDEY
MD, FCCP (USA)
Consultant Physician, Rotary Techno Netralaya

SNU Galleria: Showcasing Student Creativity and Indian Craftsmanship

SNU Galleria, the creative hub of Sister Nivedita University, celebrates the vibrancy of campus life through art, design, and handcrafted products. Curated with the motto "Designed by Students, for Students," the Galleria offers an extensive range of showpieces, apparel, bags, albums, keychains, badges, and décor items — all reflecting the spirit of young innovation. A unique highlight of the initiative is its collection of Handmade Wonders, crafted by the talented Fine Arts community of SNU. From intricate brushwork and textile creations to sculptures and mixed-media pieces, each item showcases the dedication, skill, and artistry of emerging creators. More than a store, SNU Galleria captures the essence of the university experience. Every creation is inspired by the everyday moments, achievements, and shared memories that define student life — transforming these experiences into symbols of pride, belonging, and identity. SNU Galleria stands as a tribute to creativity, craftsmanship, and the enduring stories that make university life unforgettable.

Message from the Desk of the Principal

It gives me immense pleasure to extend a warm welcome to all students, faculty members, staff, alumni, and well-wishers of our esteemed institution. An engineering college is not merely a place for acquiring degrees-it is a crucible where knowledge meets innovation, where ideas are nurtured, and where the foundation for a successful career is laid.At our college, we believe in fostering an environment that blends academic rigor with practical exposure. Our goal is to empower students with the technical knowledge, critical thinking abilities, and leadership skills required to excel in a rapidly evolving global landscape. With a team of dedicated faculty members, modern infrastructure, and industry-linked programs, we strive to ensure that every student receives a holistic learning experience.

We also place great emphasis on research, innovation, entrepreneurship, and ethical values. Our students are encouraged to participate in national and international competitions, pursue cutting-edge projects, and contribute meaningfully to society.We envisage our institution as a hub of excellence-where curiosity is celebrated, creativity is encouraged, and character is shaped. Together, let us build a future that reflects the power of education, technology, and human values.As Principal, I envision our institution as a hub of excellence-where curiosity is celebrated, creativity is encouraged, and character is shaped. Together, let us build a future that reflects the power of education, technology, and human values.

PROF.(DR.) AMAL K GHOSH
Principal, *Netaji Subhash Engineering College*

The Future of AEIE: Engineering Intelligence for an Automated Tomorrow

The future of Applied Electronics and Instrumentation Engineering (AEIE) is deeply intertwined with the evolution of smart and connected technologies. Smart sensors and intelligent control systems now enable real-time data monitoring, predictive maintenance and adaptive optimization, driving efficiency and sustainability across different sectors. With the growing adoption of Artificial Intelligence (AI), Internet of Things (IoT), robotics and cloud-based automation, AEIE professionals are becoming key contributors to Industry 4.0, where they stand at the core of designing various systems those think, sense and respond intelligently. Being inherently multi-disciplinary, AEIE blends the principles of electronics, electrical, computer science, mechanical and biomedical engineering. This versatility hence allows AEIE graduates to pursue careers in diverse domains such as industrial automation, process control, robotics, embedded systems, power plants, oil and gas, automotive technology and healthcare instrumentation.

At Netaji Subhash Engineering College, we focus on creating industry-ready AEIE graduates for this technology-driven future through a blend of theoretical knowledge, mini project-based modern laboratory training, prototype designing and research-oriented learning. Through strong collaborations with reputed industries, research organizations, IEEE, and other professional bodies, students gain hands-on experience in intelligent instrumentation, embedded systems, artificial intelligence and machine learning, robotics, IoT, VLSI, and process control. These collaborations are further strengthened through internships, skill development programs, industrial visits, workshops, and seminars, providing students with practical exposure to cutting-edge technologies and real-world problem-solving.

AEIE graduates are in demand across leading companies such as Siemens, Honeywell, ABB, Johnson Controls, Emerson, Schneider Electric, Yokogawa, Tata Power, Larsen & Toubro (L&T), General Electric (GE), Intel, Infosys, Wipro and TCS, among others. These organizations actively recruit instrumentation professionals for roles in automation, design, testing and system integration. With industries advancing toward intelligent and sustainable systems, AEIE engineers remain at the forefront, leading innovations, optimizing processes and shaping the future of automation and smart industries.

DR. ANURADHA SAHA
Assistant Professor and HOD
Department of Applied Electronics & Instrumentation Engineering
Netaji Subhash Engineering College

Agentic AI: Revolutionizing robotics with autonomy and adaptability

The evolution of AI has highlighted the need for systems that interpret languages and perform meaningful actions within digital-data rich environments. Agentic artificial intelligence (AI) has transformed AI-driven automation by moving beyond traditional text-based outputs to actionable intelligence. It addresses this gap by integrating a large Vision Language Model (VLM) to enable action-based response. Agentic AI enables real-time action execution that makes it an ideal tool for applications requiring direct operating system-level interactions. Traditional robots have primarily relied on pre-programmed instructions and rule-based systems to perform tasks. However, these approaches have limitations when it comes to dealing with complex and dynamic environments. Agentic AI, on the other hand, introduces a paradigm shift by enabling robots to proactively act and make decisions, learn and adapt and interact naturally with humans. Agentic AI works by understanding instructions about solving a task, grasping context, and acting directly within a system.It serves as a virtual assistant that interacts with your operating system or various other applications on your device just like a human. It takes your input, figures out what needs to be done, and carries out tasks without extra guidance. This makes it perfect for automating complex processes like testing software, managing financial tasks, or handling administrative work. Agentic AI enhances testing efficiency by using Retrieval-Augmented Generation (RAG) to access historical test data, logs, or past test scenarios stored in its memory. This allows the agent to validate new tests against well-established benchmarks, ensuring accuracy and reliability. Through existing data, the agent avoids unnecessarily repeating tests and speeds up the process. This makes it resource-efficient. Agentic AI improves testing efficiency by generating testing scripts - automation code created by the AI agent - for every successfully executed test scenario and storing them in its internal memory.

DR. ANUPAM GHOSH *HOD*,
Department of Artificial Intelligence & Machine Learning
***Professor**, Department of Computer Science & Engineering*
Netaji Subhash Engineering College

Walk by TINT Photography Club in and around Kumortuli

Artificial Intelligence (AI) and Job Opportunities

We all often heard that due to rapid growth in the field of Artificial Intelligence the job opportunities will be drastically reduced. But the real story is something else. The fact is, due to advancement of AI, the job roles will be different so better to say,**"it's a shift, rather than a shrink"**. A common concern raised by the development of artificial intelligence (AI) is whether or not machines would replace us in our occupations. Although this concern dates back to the Industrial Revolution, history makes it abundantly evident that while technology can alter work, it rarely completely eradicates it.Yes, some jobs will become obsolete due to AI. Machines can frequently complete repetitive tasks more quickly and more affordably, such as data entry, call handling, or standard industrial operations. However, halting here only provides half the picture. AI is producing as well as replacing.

Data scientists, machine learning engineers, AI auditors, ethics experts, and even creative workers that can use AI tools for writing, design, and media are among the new skills that are in high demand across industries due to artificial intelligence. AI is currently used by doctors to identify illnesses sooner, by educators to tailor instruction, and by financial analysts to make more accurate market predictions. These occupations are changing, not going extinct.In reality, AI makes us reevaluate our skill sets. Problem-solving, creativity, empathy, and adaptability are in; mechanical repetition is out. Those who are eager to learn alongside machines will be the ones in the occupations of the future, not those who are resistant to change.The truth is straightforward: AI shapes jobs rather than destroys them. The chances that are created when society invests in education and reskilling will greatly exceed the opportunities that are lost. The future of work will still be done by humans, although with the help of smarter technologies, so instead of being afraid of AI, we should embrace it as a collaborator.

SUBIR HAZRA
***HOD,** IT, Meghnad Saha Institute of Technology*

FUTURE UAVS FOR SMART CITIES

Drones, which are also called unmanned aerial vehicles (UAVs), are becoming important instruments for building smart cities. As cities grow, the need for better transportation, surveillance, logistics, and environmental monitoring has never been higher. UAVs provide a flexible and scalable answer to many of these problems, making them an important part of the future urban environment.One of the most potential uses is in logistics and moving people around in cities. People are imagining cargo drones and passenger air taxis as ways to cut down on traffic on city streets by creating dedicated airborne routes for quick delivery of goods and people. This fits with the bigger goal of making smart cities have transportation networks that are both long-lasting and efficient.

UAVs can help law enforcement with real-time monitoring, crowd control, and emergency response when it comes to public safety and surveillance. With improved sensors, they can give people immediate situational awareness during natural catastrophes, fires, or accidents, which can cut down on reaction times and possibly save lives.UAVs are also very important for managing infrastructure and the environment. UAVs make cities safer and cleaner by allowing for predictive maintenance and keeping an eye on air quality and traffic flow, as well as checking bridges and power lines. They work even better when they are coupled to IoT platforms and AI-driven analytics, which makes a connected urban intelligence system.But to make this vision a reality, we need strong rules, effective air traffic control systems, and strong cybersecurity measures. Governments, businesses, and digital companies will all need to work together to make sure safety, privacy, and fair access.UAV vehicles will not only add to the infrastructure already in place in cities, but they will also change how cities work, making them more efficient, robust, and sustainable. In many ways, the smart cities of the future will be flying cities that leverage UAV technology in smart ways.

INDRAJIT DAS
***Assistant Professor,** Department of IT,*
Meghnad Saha Institute of Technology

Student Achievements: Meghnad Saha Institute of Technology

Among the recent achievements, three brilliant students from the **ECE Department - Debolina Saha**, **Koushiki Ghosh**, and **Prarambhika Bhattacharjee** have secured prestigious **six-month internships at the Centre for Railway Information Systems (CRIS)** under the Ministry of Railways, Government of India. Their success is a reflection of the institute's academic strength and student preparedness.

Abhisi Das of **EE department** secured the First Prize in Extempore at BIT.

Md. Atiq Niraj Rahaman and **Sourik Majumder** of B.Tech 2nd Year students mentored by **Dr. Sukhendu Jana**, have been selected to represent MSIT at the **national-level SAP Hackfest 2025** in Coimbatore.

Koushiki Sinha, **Sanchari Chakraborty**, **Arohit Bardhan**, **Riju Saha**, and **Srijan Chakraborty** published their research paper titled "A New Differential Gene Expression Based Simulated Annealing for Solving Gene Selection Problem: A Case Study on Eosinophilic Esophagitis and Few Other Gastro-Intestinal Diseases" in ***Biochemical Genetics*** **(Springer Nature, 2024; SCI Impact Factor 2.1)**.

Another group of students - **Supriya Mandal**, **Apurvanand Sahaya**, and **Amrita Thakur** conducted a **multi-institute project** (MSIT, Amrita Vishwa Vidyapeetham, and Amity University) under Dr. Surama Biswas's guidance, leading to the paper "Optimizing Gene Selection and Network-Level Insights in Hypertrophic Cardiomyopathy: A Novel Genetic Algorithm Combined with WGCNA and Statistical Filtering", published on **MedRxiv (2025)**.

Additionally, Supriya Mandal authored another paper titled "Gene Regulatory Network Based Biomarker Transition from Normalcy to Malignancy: A Study of Lung Cancer Using Differential Gene Expression Data" (MedRxiv, 2024), also guided by Dr. Biswas.

Prospects of Electronics& Communication Engineering in the Modern World

Electronics Engineering stands at the heart of the technological revolution shaping the modern world. From smartphones and satellites to medical equipment and electric vehicles, electronics define nearly every aspect of human life today. As we move toward a more digital, automated, and connected society, the prospects of electronics engineering have become brighter than ever before.

The modern era-often termed the age of information and intelligence-is powered by advancements in semiconductor technology, embedded systems, Internet of Things (IoT), and artificial intelligence (AI). Electronics engineers play a crucial role in designing and developing these technologies, driving innovation in diverse sectors such as healthcare, communication, energy, transportation, and defense. The integration of electronics with computing and data science has opened new interdisciplinary domains, making electronics engineering one of the most dynamic and impactful branches of modern engineering.With the world's growing dependence on smart and sustainable systems, the demand for skilled electronics engineers is on the rise. In India, the government's initiatives like Make in India, Digital India, and Semicon India Program are creating new opportunities in semiconductor design, chip fabrication, and electronics manufacturing. The push toward indigenous production of integrated circuits and the development of 5G and future 6G networks further enhance the scope for innovation and research in this field.

In addition, the global transition toward renewable energy and electric mobility heavily relies on advancements in power electronics, battery management systems, and control circuits. Electronics engineers are at the forefront of creating efficient systems for solar and wind power generation, smart grids, and electric vehicles. Similarly, the rise of automation, robotics, and wearable devices is creating an ever-expanding market for embedded systems and sensor-based electronics.Academia also plays a vital role in nurturing the next generation of innovators. Institutions like Meghnad Saha Institute of Technology are equipping students with the latest skills in VLSI design, microcontrollers, signal processing, and AI-integrated electronics. The focus is shifting from traditional circuit design to intelligent systems that can sense, process, and act autonomously.Looking ahead, the future of electronics engineering will be defined by miniaturization, energy efficiency, and intelligence. As engineers continue to explore quantum electronics, nanotechnology, and flexible devices, the boundaries of what electronics can achieve will continue to expand.In conclusion, electronics engineering remains the driving force of modern innovation. With endless opportunities for research, development, and entrepreneurship, it continues to be a discipline that not only powers devices-but also empowers humanity.

MANASH CHANDA
Principal,
Meghnad Saha Institute of Technology

Research and Innovation at Netaji Subhash Engineering College (NSEC)

Fostering a Culture of Excellence

In recent years, Netaji Subhash Engineering College (NSEC) has emerged as a hub of research, innovation, and technological advancement. As a result of the institution's growing research footprint in the last five years, faculty members and students have published more than 600 peer-reviewed papers in reputed international journals, conferences, and book chapters. The college has also secured over 10 patents in the last two years, demonstrating its commitment to innovation-driven outcomes.A strong research ecosystem at NSEC is evidenced by funded research projects from prestigious agencies such as SERB (CRG-ANRF), AICTE (IDEA Lab, MODROBS, ATAL FDPs), and several consultancy initiatives. Mentorship, startup incubation, and patent support are provided by the Entrepreneurship Development Cell (EDC-NSEC) and the Institution's Innovation Council (IIC) under the MHRD-IIC framework.

With an active IEEE Student Branch and 14 IEEE Student Branch Chapters, the college regularly organizes hackathons, workshops, and technical symposiums, encouraging interdisciplinary collaboration. Its mission of transforming young engineers into global innovators, researchers, and entrepreneurs is further strengthened by numerous MoUs and collaborative programs with universities, industries, and research organizations.

DR. KOUSHIK DUTTA
Associate Professor & Head
ECE, Netaji Subhash Engineering College

An article about extracurricular activities (Sports, NCC, NSS & Taekwondo) of Netaji Subhash Engineering College

Since its establishment, this college has encouraged students to engage in various extracurricular activities through clubs like NSEC Sports & Games, National Cadet Corps (NCC), National Service Scheme (NSS), and the NSEC Taekwondo Institute.Our students have earned distinction by winning tournaments in Karate, Taekwondo, Rowing, and Kickboxing at national, state, and district levels. They have also represented MAKAUT in swimming and taekwondo competitions.Two NSEC NCC students earned shoulder ranks at 1 (WB) AIR SQN NCC: CSUO Cadet Senior Under Officer Arpita Paul and CWO Cadet Warrant Officer Sunny Kumar. Arpita Paul (IT 2025) received a recommendation from the Indian Air Force, Sunny Kumar (CSE 2025) joined the Indian Army, and Prateek Kumar Jha (CSE 2025) got a recommendation from the Indian Navy. NCC students have participated in several prestigious camps and two secured Army and Air Force jobs through their NCC experience.

The NSS and NCC units have organized various social activities, including blood donation camps, contributing significantly to community welfare.Additionally, charity medical camps have been conducted in the Sundarban region, providing vital healthcare access to its remote communities.In sports shooting, Sanjib Kumar Biswas of 2nd year AIML secured 6th place in the Air Pistol (10m) event at Youth and Junior levels during the 9th East Zone Shooting Competition in Patna and qualifies for the National level competition.The college takes pride in its recognition as a Taekwondo Institute by India Taekwondo. In the recent West Bengal State Taekwondo Championship, Anubhav Jha (2ndyear, CSE) won the gold medal and is eligible for the National Championships, while Aman Kumar Jalan (2ndyear, IT) won the silver medal. This achievement enhances NSEC's legacy of sporting excellence.

NARAYAN CHANDRA BISWAS
Associate Professor
In-Charge (Chemistry), Department of Basic Engineering Sciences & Humanities, Netaji Subhash Engineering College

Relationship with AI Application & Use in Core Electrical Engineering

In the modern technological era, Artificial Intelligence (AI) has become an integral part of modern Electrical Engineering, transforming traditional systems into intelligent, adapting, and efficient technologies.The relationship between Artificial Intelligence (AI) and Electrical Engineering is rooted in the ability of AI algorithms to analyse large sets of Electrical data, recognize patterns, and make automated decisions that enhance system performance.In electrical machines and drives, AI-based controller enhance performance, monitor health and predict component failures. Furthermore, in renewable energy system, AI plays a vital role in forecasting solar and wind energy generation, optimizing energy storage, and ensuring smooth grid integration.The fusion of AI with Internet of Things, enables smart energy management in industries and buildings, leading to sustainable and efficient operation.AI application in Power Systems include load forecasting, fault detections, predictive maintenance and energy optimization through smart grids. These intelligent grids utilize machines learning algorithms to balance demand and supply, detect abnormalities, and ensure stable power delivery. Similarly, in control systems, AI enables automation through adaptive controllers, fuzzy logic, and reinforcement learning making industrial operations more efficient and self-correcting.So, the integration of Artificial Intelligence with core Electrical principals paves the way for a smarter and more- sustainable technological future.

PROF. (DR.) MILAN BASU
HOD, *Department of Electrical Engineering, Techno International New Town*

Message from the Desk of the Principal

It gives me immense pleasure to pen a few words for our magazine, Techno Echo, a vibrant platform that mirrors the creativity, innovation, and aspirations of our students and faculty.Techno International Batanagar(TIB), a distinguished unit of the renowned Techno India Group,established in the year 2012, has already succeeded in establishing a good repute across the state.

In today's rapidly evolving world, engineering education plays a pivotal role in shaping the future. Technology is advancing at an unprecedented pace, and the responsibility lies on our shoulder to prepare young engineers who are not only technically sound but also socially responsible and ethically grounded. We take pride in fostering an ecosystem of knowledge assimilation, generation, and dissemination while instilling strong human values and a deep sense of social responsibility. In our institution, we emphasize a holistic approach to education-balancing academic rigour with opportunities for research, innovation, extracurricular activities, and community engagement. The Institution Innovation Council (IIC) of TIB operates under the Ministry of Education's Innovation Cell, Government of India, promoting a culture of entrepreneurship and innovation in the campus. Students are encouraged to explore their talents in technical project competition, cultural activities, sports, and community service, so that they can achieve excellence not only as competent engineers but also as responsible and ethical global citizens. TIB maintains a strictly monitored, ragging-free environment to ensure the safety, dignity and well-being of all students. I am proud of the dedication and hard work of our students and faculty members, whose contributions have brought laurels to the institution.May this magazine inspire us to strive for excellence, dream bigger, and make meaningful contributions to society. Together, let us build a future where technology serves humanity and education becomes the cornerstone of progress.

DR. ASHOK KUMAR NASKAR
Principal, *Techno International Batanagar*

The Future of AI and Machine Learning in India

Artificial Intelligence (AI) and Machine Learning (ML) are transforming the world at an unprecedented pace, redefining industries, economies, and human lifestyles. In India, the adoption and growth of these technologies have accelerated over the past decade, positioning the nation as one of the fastest-growing AI hubs globally. The future of AI and ML in India holds immense promise, offering opportunities for innovation, employment, and social transformation.India's AI ecosystem is thriving due to a unique blend of factors-an abundant pool of skilled engineers, rapidly growing digital infrastructure, and government initiatives promoting technological advancement. Programs like *Digital India, AI for All, and the National Strategy for Artificial Intelligence (NSAI)* launched by NITI Aayog aim to harness AI for inclusive growth across key sectors such as healthcare, agriculture, education, smart cities, and transportation.In healthcare, AI-powered diagnostic tools are revolutionizing early disease detection and personalized treatment. Machine learning algorithms can analyze medical data, X-rays, and genetic information to provide accurate results in minimal time, even in rural areas where medical specialists are scarce. In agriculture, AI and ML are being used to optimize crop yield, predict weather conditions, and detect pests, helping farmers make data-driven decisions and improve productivity.The industrial and service sectors are also embracing AI-driven automation to enhance efficiency and innovation. From intelligent chatbots improving customer experiences to predictive maintenance in manufacturing and logistics, AI applications are creating smarter and more adaptive systems. The rise of generative AI models and natural language processing tools has further opened new avenues in content creation, education, and research.The job market is evolving as well. According to recent industry reports, India's AI and data science sector is projected to create millions of new job opportunities in the coming years. However, this growth also brings the challenge of upskilling the workforce. Educational institutions must integrate AI and ML into their curricula to prepare students for a technology-driven future.Despite its enormous potential, India must address ethical, privacy, and data security concerns to ensure responsible AI adoption. Developing robust regulatory frameworks and promoting transparency in algorithmic decision-making will be crucial for sustainable growth.In conclusion, the future of AI and Machine Learning in India is not just about technological progress-it represents a transformative journey toward an intelligent, inclusive, and empowered nation. With strategic collaboration among academia, industry, and government, India is well-positioned to become a global leader in the AI revolution.

TANUSHREE GANGULY
Dept. of ECE, Meghnad Saha Institute of Technology

Message from the Desk of the Principal

Nurturing Dreams, Celebrating Excellence: A Glimpse into Campus Life at Techno International New Town

Every academic year marks a new beginning, a fresh canvas on which young minds paint their dreams, aspirations, and journeys. This year, Techno International New Town welcomed its vibrant batch of first-year students with warmth and pride. The orientation programs, mentoring sessions, and academic introductions were designed not just to familiarize them with the curriculum but also to help them feel at home in a campus that thrives on innovation, inclusivity, and creativity. Their enthusiasm has already begun to infuse the corridors with renewed energy, reaffirming our commitment to shaping tomorrow's leaders.One of the highlights of this season was our students' active engagement with the International Conference on Data Analytics and Insights (ICDAI). The presence of eminent academicians, researchers, and industry experts transformed the campus into a hub of intellectual exchange. Our budding technocrats not only participated keenly but also gained valuable exposure to the latest trends in data science, analytics, and interdisciplinary applications. For the first-year students, ICDAI was an inspiring gateway to the possibilities awaiting them in their academic journey.

Equally commendable was the outstanding participation of our students in the Smart India Hackathon, a platform that challenges young innovators to create sustainable solutions for real-world problems. With ingenuity and teamwork, our students demonstrated that they are not mere learners but potential changemakers who can contribute to the nation's digital transformation. Their dedication and innovative zeal continue to elevate the institution's reputation at the national level.Beyond academics and research, our campus remains deeply rooted in culture and tradition. With the advent of autumn, the pre-Durga Puja celebrations at Techno International New Town filled the air with festivity. The resonance of dhak, the rhythm of dance, and the artistry of students created an ambience of joy and togetherness. Such celebrations remind us that education is holistic-it nurtures not only the intellect but also the spirit of community, cultural pride, and emotional bonding.As Principal, I take immense pride in witnessing how our institution harmoniously balances knowledge with creativity, science with culture, and innovation with tradition. The new academic session began with promise, achievements, and festive cheer. I am confident that our first-year students, with guidance and perseverance, will rise to every challenge, embrace every opportunity, and make us proud torchbearers of excellence in the years ahead.

DR. AYAN CHAKRABORTY
Principal, *Techno International New Town*

Placements at Netaji Subhash Engineering College

At Netaji Subhash Engineering College (NSEC), placements are not just outcomes - they are milestones that reflect our commitment to academic excellence, skill development, and industry collaboration. Over the past two years, NSEC has consistently delivered exceptional placement results, preparing students to thrive in top organizations across IT, core engineering, analytics, and emerging domains.The current placement season, running from July 2024 to December 2025, has already recorded 89 leading recruiters and 550+ job offers. The highest package has touched an impressive ₹39 LPA, with an average package of ₹5.5 LPA. Our students have secured coveted roles in TCS Prime (53 students at ₹9 LPA) and 231 offers on Day 1 by TCS. Adding to the success, 289+ internships with PPOs have been bagged at global giants like Google, Amazon, SAP Labs, Bentley Systems, and Keysight Technologies.The previous year closed with 110 recruiters, 656 job offers, a remarkable ₹62 LPA highest package, and an average of ₹5.5 LPA.

Netaji Subhash Engineering College (NSEC) has partnered with AWS Academy, a global initiative of Amazon Web Services, to provide students with industry-aligned training in cloud computing and emerging technologies. This collaboration ensures that students gain hands-on experience with cutting-edge tools, preparing them for future-ready careers in IT, software, data, and cloud-driven industries.So far, over 300 students of NSEC have successfully earned AWS Academy certifications, showcasing the institution's commitment to building a skilled, cloud-ready workforce. These certifications not only validate students' technical expertise but also open doors to career opportunities with leading recruiters across IT services, product companies, and startups.This tie-up reflects NSEC's vision of providing world-class exposure and ensuring students are equipped with the skills of tomorrow, today. By integrating AWS Academy into its ecosystem, NSEC reaffirms its dedication to nurturing innovation, adaptability, and excellence among its students.With 1,100+ students placed in the last two years, NSEC continues to stand as a preferred destination for recruiters and a launchpad for student success. The consistent presence of marquee companies and outstanding student achievements underscore our position as one of the premier engineering institutions in the region.

DEBORSHI DUTTA
Training & Placement Officer
Netaji Subhash Engineering College

Launch of TINT.INC Newsletter 2025 celebrating the achievements of The Lost Paper & Minerva, LITWITS

AI in Engineering Education: A Double-Edged Sword

AI is changing education, and learning about engineering is one of the most important parts of this transition. AI is changing how learners learn and how educators teach, from making study programs just for them to virtual labs. But its effects aren't without problems. Personalization is AI's best feature. It synchronized with the learners pace of learning and fulfills the specific requirements. Smart instructors and Chat-bots also make studying possible at any time and from any place, giving students an effective way for time management. AI-powered virtual labs make this experience even better by facilitating sophisticated or expensive experiments in a safe way and explore them over and over again. AI also helps make sure that students learn the skills that are in high demand by making sure that the curriculum matches what businesses need.Even if AI in engineering education has some pros, it also has some cons. Too much dependence on technology might make it harder to think critically and solve problems. AI-driven learning may potentially affect teamwork and communication skills, which are very important for engineers. Ethical issues like prejudice in AI systems and the possibility of using tools for plagiarism make things much more difficult. In practice, the high costs of implementation and concerns about data privacy are major barriers. The secret is to find a balance. AI should not take the place of human teachers rather it should work with them. The best results can be achieved using blended learning modes that mix the speed of AI with the guidance of teachers. AI can help the engineer of the future, but it can't replace the curiosity and creativity that drive real invention.

SANJOY ROY
Assistant Professor, *Department of IT, Meghnad Saha Institute of Technology*

NSEC - A Destination for Excellence in Engineering Education

Netaji Subhash Engineering College (NSEC), established in 1998 and located in Garia, Kolkata, is one of the most prestigious self-financed engineering institutions in West Bengal. Affiliated to Maulana Abul Kalam Azad University of Technology (MAKAUT) and approved by AICTE, the college holds NAAC accreditation with an impressive grade and NBA accreditation for several programs including Computer Science and Engineering, Electronics and Communication Engineering, Electrical Engineering, and Biomedical Engineering. These credentials reflect NSEC's sustained commitment to academic excellence and quality assurance.

The college campus is well-equipped with state-of-the-art laboratories, ICT-enabled classrooms, a high-speed Wi-Fi network, and a rich central library that provides access to thousands of books, national and international journals, and IEEE digital resources. NSEC also emphasizes holistic learning through its active Institution's Innovation Council (IIC). It boast of very dynamic IEEE Student Branch, various technical societies, innovation clubs, and entrepreneurship initiatives that encourage students to turn ideas into impactful projects.NSEC's strong industry interface and dedicated Training and Placement Cell consistently attract reputed recruiters such as Amazon, Deloitte, TCS, Tech Mahindra, Wipro, and Capgemini, offering competitive packages (highest package being 62 LPA) and wide career opportunities. Its focus on research, innovation, and overall student development-combined with its accessible Garia location, vibrant campus culture, and committed faculty-makes Netaji Subhash Engineering College a preferred destination for aspiring engineers who seek both excellence and employability in a future-ready environment.

DR. TRIDIBESH NAG
Associate Professor & Head, *Department of Electrical Engineering, Netaji Subhash Engineering College*

Prospects of Mechanical & Civil Engineering in the Modern World

Mechanical and Civil Engineering, two of the oldest and most foundational branches of engineering, continue to remain highly relevant and impactful in the modern technological era. While rapid advancements in digital technologies have transformed industries, the physical world-its infrastructure, machines, and systems-still relies on the principles and innovations born from these two disciplines. Today, the prospects for both Mechanical and Civil Engineering are stronger than ever, driven by global demands for sustainability, automation, and smart infrastructure.

Mechanical Engineering has evolved far beyond conventional manufacturing and machine design. The modern mechanical engineer is now at the intersection of robotics, automation, renewable energy, and materials science. With the rise of Industry 4.0, mechanical engineers are integrating artificial intelligence, IoT, and data analytics into production systems, enabling smart factories that are efficient and adaptive. The automotive industry is undergoing a major transformation with the shift toward electric and autonomous vehicles, where mechanical engineers play a crucial role in designing efficient propulsion systems, lightweight materials, and energy management technologies. Moreover, advancements in additive manufacturing (3D printing) and sustainable energy systems have opened new frontiers in design innovation and product development.**Civil Engineering**, on the other hand, forms the backbone of urban development and sustainable living. As global populations grow and urbanization accelerates, the demand for resilient, eco-friendly, and intelligent infrastructure is surging. Modern civil engineers are utilizing advanced materials, automation, and digital tools such as Building Information Modeling (BIM) to construct smart cities, green buildings, and disaster-resistant structures. Sustainable construction practices, renewable energy integration, and efficient waste management systems are key areas where civil engineers contribute to achieving the goals of environmental sustainability and climate resilience.

In India, government initiatives such as *Smart Cities Mission, Bharatmala, Make in India, and National Infrastructure Pipeline (NIP)* have significantly boosted opportunities for mechanical and civil engineers. The growing emphasis on renewable energy, high-speed transportation, and sustainable housing ensures that these fields remain critical to national growth and innovation.Institutions like Meghnad Saha Institute of Technology play a pivotal role in preparing future engineers to adapt to these evolving demands. By combining traditional engineering education with modern technological skills, students are equipped to address real-world challenges through innovation and sustainability.In conclusion, Mechanical and Civil Engineering continue to be the pillars of progress in the modern world. Their prospects are vast-encompassing automation, sustainability, and infrastructure development-ensuring that they will remain indispensable in building a smarter, stronger, and more sustainable future.

S.K. HASIM
Dean, *Meghnad Saha Institute of Technology*

Message from the Desk of the Principal

In today's rapidly evolving world, engineering stands as the driving force behind technological progress and sustainable development. The demand for skilled engineers continues to grow across global job markets, with industries seeking professionals who can innovate, adapt, and lead in an ever-changing landscape. At MSIT, we take immense pride in nurturing such future-ready engineers equipped with strong technical foundations and practical exposure. This year is especially significant as we celebrate the Silver Jubilee of MSIT, marking 25 years of excellence in technical education, innovation, and nation-building. Over the years, MSIT has emerged as a centre of academic distinction with excellent placement records, a strong culture of research and higher education, and committed, highly qualified faculty who guide and inspire the next generation of engineers and innovators.The institute is delighted to highlight the 100% placement record achieved by the Civil Engineering (CE) and Mechanical Engineering (ME) departments during the current academic year. This remarkable success reflects the dedication of our students, faculty mentors, and our continuous engagement with reputed industries.ECE and EE Departments have witnessed vibrant technical activities, including industrial visits, workshops, distinguished lectures, and faculty development programs, ensuring holistic exposure for students. Our ECE and CSE departments continue to contribute significantly to cutting-edge research, publishing in reputed journals, and guiding student innovation through collaborative projects. A cordial environment, industry-oriented teaching, and hands-on learning remain at the heart of our academic philosophy, ensuring students gain both conceptual clarity and real-world understanding.

Special attention is given to 1styear students to help them transition smoothly into engineering education through mentoring, interactive sessions, and foundational workshops. The college also encourages innovation and entrepreneurship through multiple initiatives such as the SAP Hackathons, Internal Hackathon for SIH 2025, and the DSIR PRISM Workshop organized in association with IIT Guwahati, fostering creativity, problem-solving, and start-up culture among young engineers.Our vibrant campus life was on display during the Gracias'25 farewell to the Greenovation Club members and our collaboration in hosting the Agile Kolkata Conference 2025, which brought industry insights directly to our academic environment.The Department of ECE, Meghnad Saha Institute of Technology organized an ATAL FDP on "Next-Generation Semiconductor Sensing: Integrating Nanotechnology and Materials".Beyond academics, MSIT promotes the 360-degree growth of students through a vibrant range of co-curricular and cultural activities. Events like "Prambha" organized by Messon, the official alumni association, and the National Sports Day celebration by the MSIT Sports Club, encourage teamwork, leadership, and community spirit.As Principal, I take pride in the collective achievements of our students, faculty, and staff. Together, we continue to build an ecosystem that not only imparts education but also shapes innovators, leaders, and responsible citizens for a better tomorrow.

PROF. (DR.) MANASH CHANDA
Principal, *Meghnad Saha Institute of Technology*

DOCTOR'S COLUMN

Glaucoma: The Silent Thief of Sight

Glaucoma is the most common cause of Irreversible blindness worldwide. Around 90% patients remain undiagnosed till they lose vision. Approximately 80 million people are living with glaucoma worldwide. Glaucoma is a group of eye diseases that damage the optic nerve — which connects the eye to the brain and allows vision. This damage is mostly caused by increased pressure inside the eye, known as intraocular pressure (IOP). If glaucoma is not detected and treated early, it can lead to irreversible vision loss and even blindness.

How the Eye Works: Eye is filled with a clear fluid called aqueous humor that nourishes the eye and maintains its shape. This fluid is constantly produced and drained through a fine meshwork at the front of the eye. When the drainage pathway gets blocked or the eye produces more fluid, pressure builds up inside the eye. Over time, this pressure permanently damages the optic nerve fibers which transmit visual signals to the brain.

Types of Glaucoma:
1. Primary Open-Angle Glaucoma (POAG): The most common form. It develops slowly and painlessly, often without symptoms until much vision has been lost.
2. Angle-Closure Glaucoma: Occurs when the drainage angle of the eye becomes blocked. This causes a rapid rise in pressure, leading to severe eye pain, headache, blurred vision, and nausea.
3. Normal-Tension Glaucoma: The optic nerve gets damaged even in normal eye pressure. Poor blood flow or increased sensitivity of the optic nerve causes glaucoma .
4. Secondary and Congenital Glaucomas: These occur due to eye injury or eye disease or medication use (like steroids), or are present from birth due to developmental defects.

Who Is at Risk? Anyone can develop glaucoma, but the risk increases with:
• Age over 40 • Family history of glaucoma • Diabetes or Systemic Hypertension • Long-term use of steroid medicines • Eye injuries or high myopia

Symptoms to Watch For: Most types of glaucoma have no early symptoms that is why it is called silent thief of sight. Vision loss usually starts at the periphery and goes unnoticed until it becomes severe.
In acute angle-closure glaucoma, symptoms may include: • Sudden severe eye pain • Headache • Blurred or haloed vision around lights • Nausea and vomiting

Diagnosis and Treatment: Early detection through regular eye exams is the key to prevent blindness. Eye specialists use: • Tonometry to measure eye pressure • Ophthalmoscopy to check the optic nerve • Visual field tests to detect peripheral vision loss
Treatment aims to lower eye pressure and protect the optic nerve damage, using: • Eye drops (the most common and effective first step) • Laser therapy to improve fluid drainage • Surgery in advanced or unresponsive cases

Living with Glaucoma: Although glaucoma cannot be cured, it can be controlled. With early diagnosis, regular treatment and follow-up, most people with glaucoma can keep good vision.

The most important message: A simple, regular eye exam every 1 to 2 years, especially after age 40 can save your sight.

DR. PANKAJ RUPAULIHA
MBBS, DNB, FRCS (Glasgow)
Clinical Director
Rotary Techno Netralaya

Einstein's Struggle with the Cosmological Constant

In 1917, shortly after publishing the general theory of relativity, Albert Einstein sought to apply his equations to the universe as a whole. At that time, the prevailing belief among scientists was that the cosmos was static. Yet his original equations naturally predicted a universe that was either expanding or contracting under gravity. A static universe did not appear as a solution. To address this conflict, Einstein modified his equations by introducing an additional term: the cosmological constant, Λ. The field equations became

$$R_{\mu\nu} - \frac{1}{2}Rg_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi G}{c^4}T_{\mu\nu}$$

This new term was given a positive value, acting like a repulsive force to counter the attraction of matter. With the right value, Einstein obtained a static universe, consistent with expectations of the time. Still, he was never fully at ease with this modification because it felt unnatural and esoteric. His doubts were confirmed in 1929, when Edwin Hubble discovered that galaxies are receding, showing the universe is expanding. Einstein then discarded Λ, effectively setting it to zero, and later called its introduction his "greatest blunder". For decades, cosmologists likewise assumed ?Λ=0.

In the late 20th century, however, observations of distant supernovae revealed that cosmic expansion is accelerating — leaving the cosmologists stumped. The most widely accepted explanation is again a positive Λ, now interpreted not as a fix, but as an actual property of space: the energy density of the vacuum. This very Λ is the driving force behind the accelerated expansion of the universe. Today this constant represents a more aptly called object— "dark energy". Acceptance of this dark energy however leads to heavily controversial implications (like negative pressure, constant energy density), and to this day, explaining the accelerated expansion of the universe without resorting to dark energy is an active region.

INDRANIL MITRA
Assistant Professor, *BSH, Techno International Batanagar*

Engineering the Next Generation of AI: Efficient Scaling of Intelligence and Safety

The recent generative AI revolution is undeniable, yet it has revealed a profound engineering challenge. Today's Large Language Models (LLMs) often produce hallucinations and misinformation, struggle to grasp evolving contexts, and operate on knowledge accumulated from unchecked internet data, where no filtration, quality, or uniformity is performed. The engineering frontier is no longer a simple race for scale; it is a mandate to build systems that are reliable, trustworthy, and contextually aware.Many modern AI engineers are focusing on these issues by architecting a new generation of language models. Aprimary focus is engineering for truth. Works on factual information generation aims to combat hallucinations by creating models that can dynamically acquire and explore knowledge, rather than just repeating patterns from fixed training data. Also, worldwide works are going on at present for smaller, specialized language models that can learn without massive pre-training, showing a path toward more accessible AI, democratizing innovation beyond a few tech giants.Finally, for AI to fulfill its global promise, we must engineer for inclusivity. A core part of many crucial and timely works involves developing sophisticated models for low-resource regional languages, such as Indo-Aryan languages, for Indian contexts. This enables them to understand deep cultural nuances, including local events, latest information, literature, news, and heritage, a critical step towards equitable technology.The future of engineering lies not in merely using AI, but in architecting it. The global job market will increasingly seek experts who can develop such trustworthy, efficient, and inclusive AI technology that is not only powerful but also truly intelligent.

SOURAV DAS
Assistant Professor
Computer Applications,
Meghnad Saha Institute of Technology

Slimming Down AI: Distilling knowledge for Real-Time Human Activity Recognition

Human Activity Recognition (HAR) has emerged as a prominent research domain, largely facilitated by the pervasive integration of heterogeneous sensors within modern mobile devices. In order to detect activities, readings from various sensors need to be collected. These sensors can be primarily categorized into two, ambient and wearable sensors. Ambient sensors, installed at fixed locations, rely on a server-client framework (e.g. a Wi-Fi access point and a smartphone) to recognize activities, whereas wearable sensors are lightweight and portable, often integrated into smart devices, making them more convenient for continuous monitoring. All these sensors help in detection of one common activity, locomotion. Real-time HAR has gained significant attention due to its applicability in domains such as healthcare monitoring, fitness tracking, and user-adaptive systems. Although state-of-the-art deep learning models achieve high accuracy in activity classification, their large computational overhead and memory requirements pose challenges for real-time inference, particularly on edge or resource-constrained devices.

Large models have the ability to completely memorize datasets and are trained to learn specific task solutions prompting significant debate regarding the necessity for achieving excellent accuracy. In HAR, a major challenge lies in addressing calibration inconsistencies across sensors, requiring models that can reliably analyze heterogeneous signal patterns. This necessitates the adoption of knowledge distillation to reduce model complexity while preserving predictive performance. This method aims to transfer the knowledge gained bylarge models to a smaller model thus making them mimic the behavior of large models. Naïve compression can compromise model performance, so lightweight models must intelligently capture complex relationships within sensor data. Knowledge distillation leverages a well-trained teacher model to transfer expertise to a smaller student model, achieving efficient real-time activity recognition without sacrificing accuracy.

DIPANNYTA NANDI
Assistant Professor
Department of CSE, Techno International Batanagar

RECENT EVENTS OF TECHNO INTERNATIONAL NEW TOWN

International Conference on Data Analytics and Insights (ICDAI2025)

The International Conference on Data Analytics and Insights (ICDAI 2025) marked three days of knowledge sharing, innovation, and collaboration. It began with a pre-conference workshop featuring engaging sessions by Prof. Jyotsna Kumar Mandal, Dr. Soumya Sen, Mr. Snehasis Banerjee, Dr. Sajal Saha, and Mr. Shibashis Ghosh. Covering areas such as Artificial Intelligence and Cybersecurity, the workshop provided a strong foundation for the main conference.

The inauguration ceremony took place at the Empress Hall, Fairfield by Marriott. The grand opening included Saraswati Vandana and the traditional lighting of the lamp, setting a reverent and celebratory tone. Distinguished guests in attendance included Padma Shri Prof. Bimal Kumar Roy (Former Director, Indian Statistical Institute), Dr. Ch. A.S. Murty (Sr. Director & Centre Head, CDAC Kolkata), Mr. Jaydip Mukherjee (Special Secretary, Higher Education, Govt. of West Bengal), Dr. Sanku Bose (GCEO, TIG & ViceChancellor, SNU), and Prof. Dhrubajyoti Chattopadhyay (Pro-Chancellor, SNU), among others. Their keynote addresses highlighted the relevance of data-driven research in today's world.

ICDAI 2025 received an overwhelming response from the academic community, with nearly 400 research paper submissions from across the globe, out of which 78 high-quality papers were accepted after a rigorous review process. Across 29th and 30th August, technical sessions, panel discussions, and paper presentations explored emerging trends in AI, Big Data, IoT, and Intelligent Systems. The conference concluded with a valedictory session acknowledging the success of the event and expressing appreciation to all contributors. ICDAI 2025 was a vibrant platform for global exchange and innovation in data analytics. Chief Guest Dr. Daniel D. Dasig Jr. from Manila, Philippinesdelivered an insightful talk on the future of Data Analytics.Certificates of appreciation were presented to all committee members and student volunteers for their dedicated efforts. The Best Paper Award was also conferred to the deserving authors for their outstanding presentation.

Internal Hackathon SIH 2025 at TINT: A Celebration of Innovation

The Internal Hackathon for SIH 2025 at Techno International New Town was a thrilling display of creativity, collaboration, and technical brilliance. Organized by the TINT Coding Club, GENESIS Science & Technology Club, IIC-TINT, and IQAC, the event gave students a platform to tackle real-world problems through innovative software and hardware solutions.A total of 123 teams, each with six members (including at least one female participant), competed across 68 problem statements - 18 hardware and 105 software challenges. The hackathon attracted 738 students from diverse streams, including 230 female and 508 male participants, highlighting its inclusivity and interdisciplinary appeal.Guided by 59 mentors (21 females, 38 male) and evaluated by 41 expert judges across 10 panels and rooms, teams received invaluable advice and constructive feedback. Participants explored cutting-edge domains such as AI, ML, IoT, and Robotics, gaining hands-on experience, teamwork skills, and problem-solving expertise.

AICTE-VAANI 2025 at Techno International New Town

The Department of Computer Science and Engineering, Techno International New Town, successfully organized AICTE-VAANI 2025. The event witnessed active participation from many faculty members of the institution, who engaged in insightful discussions, interactive sessions, and knowledge-sharing forums.AICTE-VAANI served as a significant platform to deliberate on academic innovations, effective teaching-learning practices, and the integration of technology in higher education. The program fostered collaboration and exchange of ideas among educators, thereby strengthening the academic ecosystem of TINT.The two-day event concluded with appreciation for the enthusiastic participation of the faculty members and the dedicated efforts of the Department of CSE in ensuring the success of the program.

IPIM's Employability Enhancement Program @ NSEC

IPIM's Employability Enhancement Program assisted studentshone their life skills, uplift confidence, sharpenemployability skills and prepare for real professional environments. Every session,through a mix of theory and experiential learning, was designed to help them grow both professionally and personally.

Strength-Weakness and Self-Analysis: Individual deep-divehelpedidentify / explore their strengths, weaknesses, opportunities and threats, defog and reflect on who they are, their purpose, aspirations,to be self-aware and move closer to lifegoals.
Personality Development and Psychometric Analysis: Through various psychometric tests, like MBTI, D.O.P.E., students understood their unique traits to help them adapt to different situations.
Experiential Learning and Critical Thinking: Through stimulating situation-based activities, (eg. "Stranded on Mars"), students learnt prioritizing with limited resources, critical thinking and decision making. These gamifications stimulated creative energies and encouraged lateral thinking.
Problem Solving: Students opened up about real challenges they face in everyday life and learned to approach them through a calm, structured and pragmatic approach.
Group Discussions and Personal Interviews: Students learnt techniques of effective group discussions. During personal interview rehearsals, they learned how to express their achievements, maintain composure and build meaningful conversations.
Interview Preparation: Students learned how to speak with confidence, introduce themselves effectively, and communicate with clarity. Multiple exercises helped overcome hesitation and present genuinely.
Time Management and Prioritization: Through guided tasks, students understood how to organize time, prioritize what truly matters, and balance multiple responsibilities.
Non-Verbal Communication: Students improved posture, gestures, expressions and eye contact to influence self-image, project confidence and sincerity through their presence.
Confidence and Industry Readiness: By the end, students felt self-assured, expressive, and prepared for the professional world. IPIMsummarized their individual skill matrices, helping each student identify their strengths and personal gaps. The program ensured that participants left feeling industry-ready and equipped to excel with confidence and clarity.

ADOLINA GANGULY
***Founder & Director**, IPIM*

EVENTS OF MEGHNAD SAHA INSTITUTE OF TECHNOLOGY

Department of CSE organized an expert lecture on **Introduction to Malware Development** by Prof. Bharat Kaistha, and a **Sigma Talk** by Mr. Gourav Mandal, enhancing students' knowledge of emerging technologies and cyber trends.

Department of Electronics & Communication Engineering (ECE) organized several impactful academic and industrial initiatives. Key highlights included an industry visit to CMERI, Durgapur for second-year students, a 6-Day **ATAL FDP**on "Next-Generation Semiconductor Sensing: Integrating Nanotechnology and Materials", a Distinguished Lecture by Prof. Monoj Saxena, and a one-day TSpice workshop.

Department of Electrical Engineering focused on industry-oriented learning through visits to Kolaghat Thermal Power Plant, CLW (Dankuni Unit), and Kachrapara Railway Workshop, along with internships at Bakreswar, Mejia (MTPS), DVC, and Indian Railways. Students participated in a CADD training program, and third-year students designed

models on **"Linear and Non-linear Elements Identification."** Under the departmental club SinuSoid, a workshop on CV preparation

was held. Abhisi Das won First Prize in Extempore at BIT. An MoU with WBPDCL further strengthened research and internship collaboration.

Department of Basic Sciences & Humanities successfully hosted **Bodhika 2025**, the First-Year Orientation and Induction Program, on 15th September 2025, coinciding with Engineer's Day. The event featured Prof. (Dr.) Sanku Bose, Vice-Chancellor of SNU, as Chief Guest, and Prof. (Dr.) Suman Chatterjee, CEO-Academics, TIG, as Guest of Honour. The

highlight of the program was the unveiling of MSIT's Silver Jubilee Logo, commemorating 25 years of excellence. The Department of Basic Sciences & Humanities at Meghnad Saha Institute of Technology (MSIT),

in collaboration with the Institution's Innovation Council, successfully celebrated **National Science Day 2025.**

The **Bright S&T Innovative Idea (PPT) Presentation** was organized by TOCIC, IIT Guwahati, in collaboration with Meghnad Saha Institute of Technology (MSIT) at the J.C. Bose Auditorium, MSIT. The event began with a briefing by Prof. Sukhomoy Pal (IIT Guwahati) on the proposal submission process, followed by a panel discussion featuring Prof. Utpal Ganguly, Prof. C.K. Bhattacharya, and others. After high tea, 13 student groups presented their innovative project ideas before an expert panel comprising Dr. S.N. Patra, Dr. S.K. Naskar, and Dr. S.K. Ghosh. The top three projects were recognized for their innovation and social impact. The event, attended by 70 students and 25 faculty members, concluded with a vote of thanks by Prof. Chandi Pani.

AGILE Kolkata 2025 Conference, themed **"Human-Centered Agility: Building Empathy in the Age of AI"** was held at MSIT. It brought together 70+ industry experts, 150+ participants, and included talks, workshops, and panel discussions on AI, innovation, and Agile practices.

The Resilient Club conducted a **Mega Saree & Shringar Kit Donation Drive** in two phases, spreading joy and inclusivity during Durga Puja. **National Sports Day 2025** was celebrated organized by UDAAN - The Official Sports Club of MSIT under the Games & Sports Committee.

Message from the Desk of the Principal

Siliguri Institute of Technology (SIT), a premier institution of the Techno India Group, stands as a beacon of academic excellence, cutting-edge innovation, and comprehensive student development. Nestled in the scenic foothills of North Bengal, SIT provides a vibrant and intellectually stimulating academic environment. With state-of-the-art infrastructure, a highly qualified faculty, and a strong emphasis on student-centric learning, the institute is committed to nurturing future-ready professionals. Our mission is to impart quality technical education that fosters well-rounded individuals capable of meeting the evolving needs of industry and society, while also encouraging lifelong engagement with research, higher education, and innovation-both in India and abroad.

As an AICTE-approved and NAAC-accredited institution affiliated with MAKAUT, SIT consistently upholds rigorous academic standards. Our dynamic, outcome-based curriculum is designed to align with industry demands closely. We cultivate analytical thinking, creativity, and continuous evaluation across all programs-from Engineering and Technology to Management and Applied Sciences. SIT also fosters a culture of research and entrepreneurship through its dedicated R&D Cell and Incubation Centre, in collaboration with AIC T-Hub Hyderabad. Students and faculty are actively encouraged to engage with emerging technologies, pursue innovations, publish research, and innovate new ideas for the betterment of society. Beyond academics, we emphasize personal development and emotional well-being. Our structured mentorship programs, bridge courses, soft-skills training, and career support services ensure that students evolve into not only competent professionals but also ethical and socially responsible citizens. A rich array of co-curricular and cultural activities adds more depth to campus life, fostering leadership, teamwork, and creativity.

At SIT, quality is a continuous pursuit. The Internal Quality Assurance Cell (IQAC) plays a pivotal role in enhancing institutional practices through regular assessments, fostering transparency, and sustained excellence. I encourage students to remain focused and confident during the preparation for semester university examinations. Let your preparation reflect your dedication. To our final-year students, the ongoing campus placement season marks a defining chapter-approach it with clarity, conviction, and grace. On behalf of the entire SIT family, I extend my best wishes for your success-both in examinations and in your professional journey ahead. Dream big, stay grounded, and never stop learning.

With warm regards and blessings.

DR. JOYDEEP DUTTA
Principal, *Siliguri Institute of Technology*

NEW INITIATIVES BY TECHNO INTERNATIONAL NEW TOWN

Implementation of Structured Mentoring Programs for Students

Techno International New Town has introduced a structured mentoring program to provide continuous academic, personal, and emotional guidance to students. Under this initiative, each faculty mentor is assigned to a group of students to monitor their academic progress, attendance, and overall well-being throughout the semester. Regular mentor-mentee meetings are conducted to discuss academic challenges, career goals, and personal concerns. Special emphasis is given to the mental well-being of students through open interactions, counselling support, and confidence-building activities. This structured approach aims to foster a strong mentor-mentee bond, promote holistic development, and create a supportive environment that enhances student motivation, performance, and emotional resilience.

The college continues to foster academic excellence and holistic growth through various key initiatives:

- **Promotion of Learning:** The college actively encourages both faculty and students to enroll in Coursera and NPTEL courses, fostering continuous skill development, knowledge enhancement, and lifelong learning.
- **Research, Innovation, and Incubation Support:** With projects valued at ?45-50 lakhs, the college has revised its Research, Innovation, and Incubation Policy to facilitate collaborative work between students and faculty. This initiative, supported by the Business Incubation Cell and IQAC, aims to increase project opportunities, promote innovative solutions, and strengthen the culture of research and entrepreneurship.
- **Attendance Management and Regularization:** To ensure transparency and efficiency in attendance tracking, the college has introduced the TIG CheckIn App, streamlining attendance regularization and enhancing academic discipline.
- **Structured Mentoring Program:** Techno International New Town has implemented a comprehensive mentoring initiative to provide continuous academic, personal, and emotional guidance to students. Under this program:

a. Each faculty mentor is assigned a group of students to monitor their academic progress, attendance, and overall well-being throughout the semester.

b. Regular mentor-mentee meetings are conducted to address academic challenges, career aspirations, and personal concerns.

c. Special emphasis is placed on mental well-being, offering open interactions, counselling support, and confidence-building activities.

Growing Market for Instant Food in India

The instant food market in India is experiencing a significant boom, driven by major socio-economic shifts. Urbanization, a decline in domestic help, and the rise of nuclear families have reduced the time and resources available for traditional cooking. This is compounded by rising incomes and more women joining the workforce, increasing the demand for quick meal solutions. Furthermore, the increasing cost of raw materials makes home cooking expensive for many, with 29% of metro residents finding instant food a more economical choice. The market has responded with a flood of new, tasty, and affordable products, heavily promoted through persuasive media and celebrity endorsements, making them highly appealing.

However, this convenience comes with significant health demerits. Regular consumption of instant food, which is often high in sugar, unhealthy fats, sodium, and preservatives, increases the risk of several diseases. These include obesity, liver damage from artificial trans fats, and cardiovascular diseases like heart attacks and high blood pressure due to clogged arteries. In conclusion, while the instant food market is thriving due to modern lifestyle demands and its appealing taste, consumers must be aware of the potential long-term health consequences of making it a dietary staple.

SUPROTIM SARKAR
Assistant Professor & H.O.D
Department of Hospitality & Hotel Administration
Siliguri Institute of Technology

Indian Value System: The Path to Productivity

As Artificial Intelligence takes over the world communication skills, workplace ethics play a dominant role to excel in workplace. The reason behind this formula is very simple. Effective communication is an essential skill for career growth which builds trust, enhances collaboration, and increases influence in the workplace. Effective communication can be possible when we go down to our ancient Indian Value System. The core values are Dharma, Artha, Kama and Moksha. Dharma means following the path of righteousness, adhering to morals and listening to the call of our conscience .It also suggest cooperation, coordination, transparency, shedding the ego, protecting the ego of others and be courteous whatever be the situation. Artha on the other hand is earning by the virtue of hard work and treading the path of honesty and truth .Kama as it says desire for betterment, improving the skills, become a better version of oneself. Each day is a new beginning: the step to acquire the art of pursuing material comforts within the boundaries of Dharma. Moksha means liberation from all bondage that led the individual to adhere to the right path. It is the way to spiritual progress that the individual can attain amid the mundane ambience. No need of setting out on a pilgrimage to achieve Moksha or renouncement from all material desires that do not provide satisfaction and peace. Late Ratan Tata, the visionary Indian industrialist, philanthropist, and former chairman of the Tata Group shall always be remembered for his spiritual practice in business that set his life an example for others to follow through forgiveness, focus on self-improvement, Philanthropic work and transcending the barriers of religion to reach the ocean of humanity.

RIMNI CHAKRAVARTY
Asst. Professor,
Humanities Department of Engineering Sciences and Humanitiesm, Siliguri Institute of Technology

The Ancestral Code of Engineering from Africa to Aryavarta

Before names, nations, or scriptures there was a journey. Around 70,000 years ago, a small band of early humans walked out of Africa. They did not know they were setting the course of civilization; they were simply following the pull of survival, guided by the same curiosity that still stirs within us today. Some of them reached the fertile lands that would one day be called Bharat. From that migration was born not just India, but the entire mosaic of humanity as we know it. Modern genetic research confirms what myths once hinted at all humans share a single ancestral origin. Mitochondrial DNA studies trace the lineage of modern Indians directly back to early African populations. The Jarwa and Onge tribes of the Andaman Islands are living bridges to this past. Their DNA is remarkably similar to the oldest African lineages, offering living proof of our shared roots. When we look at them, we are not observing a separate people we are seeing an untouched reflection of who we once were. Their existence is a biological time capsule that links the African cradle to the Indian heart. The modern age has given us powerful tools to read the forgotten chapters of our past. Genetic engineering and computational biology now help scientists reconstruct the path of migration showing how tribes, families, and cultures spread across continents. Meanwhile, civil and structural engineering technologies like LIDAR scanning, ground-penetrating radar and spectral imaging have unearthed extraordinary truths. Ancient cities like Dwarka long thought to be myth have emerged beneath the sea, revealing advanced architectural patterns aligned with the stars. Even the Rig Vedic hymns, once dismissed as symbolic poetry, are being re-examined through AI-assisted text reconstruction and mathematical modelling. These verses encode astronomical data, acoustic resonance patterns, and geometric precision suggesting that Vedic thinkers were not just poets, but early engineers of sound, space, and symmetry. Engineering bridges the tangible and the transcendental. Through its lens, we begin to see that spirituality and science were never opposites they were two sides of the same ancient wisdom. Material scientists have found that the metals in certain temple pillars were designed to amplify sound vibrations, creating harmonic frequencies that aligned with planetary cycles. The ancients, it seems, engineered their devotion. "We are not the product of divided origins but the continuation of one eternal rhythm a rhythm that began in Africa, resonated through the Andamans, and found its full voice in the chants of the Rig Veda."

From the heart of Africa to the soul of Aryavarta, the journey of humankind has always been one a story of curiosity, migration, and rediscovery. Each breakthrough in science, each decoding of an inscription or a strand of DNA, brings us closer to realizing that humanity has never been divided by race or religion only scattered across time.

Engineering, in its truest form, is not just a science of creation; it is a remembrance. It helps us listen to the language of our stones, the pulse of our genes, and the whispers of our ancestors. And in that remembrance, we find the most profound truth of all that the journey of humankind has never ended. It continues in us.

HRISHIKESH ROY
Assistant Professor, *English (DESH)*
Siliguri Institute of Technology

New initiatives by Siliguri Institute of Technology

Career Excellence Program 1.0

SIT has launched a Career Excellence Program 1.0 for Classes XI and XII students in the Science stream under CBSE syllabus. The aim of this program is to equip students with a robust foundation in core subjects - Physics, Chemistry and Mathematics to prepare them for future academic endeavours like IIT-JEE and WBJEE.

Overall upliftment and welfare of our Group D staff

SIT has taken a new Initiatives aimed at the overall upliftment and welfare of our Group D staff, including gardeners, housekeeping personnels and security staffs. These initiatives focus on skill enhancement, better work facilities, and welfare programmes designed to improve their quality of life and work environment. The trainings include the following areas: Yoga, Personality Development, First Aid, Nutrition awareness, Health Check-Up, Fire Fighting Training, Computer Literacy

RECENT ACHIEVEMENTS OF STUDENTS / FACULTY OF TINT

Team Grid Nova Shines at Internal SIH 2025

Team Grid Nova, comprising four students from the Department of Electrical Engineering and two students from the Department of Computer Science & Engineering, under the supervision of Prof. Debasish Biswas and Dr. Syamasree Biswas Raha, Assistant Professor, Department of Electrical Engineering, successfully presented an interdisciplinary project and secured the First Position in the Hardware category of the Internal Smart India Hackathon (SIH) 2025, held at Techno International New Town. The team has been nominated to represent the institution in the National Mega Project Competition - SIH 2025.

Professor Nilanjan Dey Among World's Top 2% Scientists (2025)

Professor Nilanjan Dey has once again been recognized among the Top 2% Scientists Worldwide, as published by Stanford University and Elsevier in their prestigious global ranking released on 19th September 2025.

Team Commit and Conquer Secures 1st Runner-Up at Smart Makathon (SMF)

Team Commit and Conquer achieved the 1st Runner-Up position at the Smart Makathon (SMF), a 24-hour continuous hackathon held at the Institute of Engineering and Management (IEM) Main Campus, Sector V, Kolkata. The team comprised Somnath Mukherjee (3rd Year CSE), Naila Farooque (3rd Year CSE), and Piyush Goenka (4th Year CSE), showcasing innovation and technical excellence throughout the event.

Achievement in FOSET Academic Meet 2025

Final-year Electrical Engineering students, Bishal Dasgupta and Sheikh Arishuddin, presented a conference paper titled "Sustainable Charging: The Eco-Friendly Future of Solar-Powered EV Station" under the guidance of Prof. Monalisa Datta at the 5th Academic Meet 2025 organized by the Forum of Scientists, Engineers and Technologists (FOSET), held at Swami Vivekananda Institute of Science and Technology. Their paper was highly appreciated, and they secured the 2nd Position in the event.

Piyush Goenka Wins UI/UX Design Competition at HECTetc 2k25

Piyush Goenka, a 3rdyear student of Computer Science & Engineering, has been declared the Winner of the UI/UX Design Competition at HECTetc 2k25, organized by Hooghly Engineering & Technology College (HETC). His creative design skills and innovative approach were highly appreciated, bringing pride to the department and the institute.

TINT Dance Team bagged 2nd Prize at World Standards Day 2025 organised by Bureau of Indian Standards (BIS) - Asmita Chowdhury, Debasmita Seth, Ritabrita Mallick, Sriza Biswas, and Bijatri Das for their stunning performance - accompanied and guided by mentors Dr. Anindita Ray and Dr. Kashmi Mondal.

Team TINT_RandomDevs Excels at All India Hackfest 2025

Team TINT_RandomDevs secured the 2nd Runners-up position at the All India Hackfest 2025, organized by PSG Institute of Technology and Applied Research (PSGiTech) in collaboration with SAP. Their project, "Smart Grow: India's First Full Stack AI-powered Hydroponic Ecosystem" (Sustainable Business), showcased innovative technology for sustainable agriculture. The team comprised Saikat Dutta, Punit Kumar, Archi Jaiswal, and Ayushi Ghosh, guided by Prof. Debraj Chatterjee (CSE).

Patent Granted

The patent titled "Deep Discharge Overcurrent Protection Enabled Charging System for Electric Two- and Three-Wheelers" has been officially granted. The inventors of this innovation are Dr. Milan Basu, Mitul Ranjan Chakraborty and Bibhuti Sarkar from the Department of Electrical Engineering.

Crime Data Analysis and Prediction Using Machine Learning Approaches

In today's data-driven era, machine learning (ML) has emerged as a revolutionary tool in the field of crime analysis and prediction. With urbanization and digitalization, the volume of crime data is growing exponentially-according to the National Crime Records Bureau (NCRB), India reported over 58 lakh cognizable crimes in 2023, marking a 7.2% increase from the previous year. Harnessing such vast datasets using ML enables law enforcement agencies to identify patterns, predict hotspots, and optimize preventive strategies. Machine learning models like Logistic Regression, Random Forests, Support Vector Machines (SVM), and Deep Neural Networks (DNN) are being applied to predict the likelihood of crimes based on spatial, temporal, and socio-economic variables. For instance, cities like Chicago and Los Angeles have implemented predictive policing models that achieved nearly 30-40% reductions in burglary and theft rates by identifying vulnerable areas beforehand. In India, the integration of ML with Geographic Information Systems (GIS) is enabling predictive heatmaps of crime-prone zones. Studies have shown that models trained on five years of NCRB data achieved up to 85% accuracy in predicting future crime trends, especially in urban clusters. Moreover, Natural Language Processing (NLP) techniques are being employed to analyze social media data and detect potential threats, cyberbullying, or extremist behaviour in real time. However, challenges remain-bias in datasets, privacy concerns, and the ethical use of AI in policing require urgent attention. To ensure fairness, transparent algorithms and explainable AI models must be adopted. Machine learning is not just a technological advancement - it's a paradigm shift towards data-informed policing. When responsibly implemented, it holds the potential to transform crime prevention from a reactive process into a predictive, proactive, and precise system for safer societies.

DR. ANUPAM MUKHERJEE
HOD, *CSE, Siliguri Institute of Technology*

Blockchain Technology in Power Trading

Blockchain technology is starting to revolutionize the power industry, especially in the trading of electricity. Power trading has historically involved centralized entities that oversee generation, transmission, and distribution, such as utilities or grid operators. This centralized method frequently results in inefficiencies, expensive transactions, and settlement delays. A promising substitute is provided by blockchain, which is transparent and decentralized. A distributed digital ledger known as a blockchain securely and irrevocably logs transactions over a network of computers. Peer-to-peer (P2P) energy transactions between producers and consumers without the use of middlemen are made possible by power trading. For instance, using blockchain-based smart contracts that automatically verify, record, and settle transactions in real time, homes with rooftop solar panels can sell excess electricity directly to consumers in the area. Because every transaction is viewable on the blockchain, this approach increases transparency and lowers the likelihood of fraud and conflicts. By facilitating immediate settlements and reducing administrative burden, it also increases efficiency. Additionally, blockchain makes it easier to integrate renewable energy sources, enabling localized trading systems and microgrids that can function separately from the main grid. India has started investigating the use of blockchain technology in electricity trade. Notably, blockchain has shown promise in facilitating P2P renewable energy trading among prosumers through pilot projects in Delhi and Uttar Pradesh. These projects demonstrate how blockchain technology may support government endeavours to advance decentralized and renewable energy systems. However, prior to widespread usage, issues including cybersecurity, scalability, and regulatory uncertainties need to be resolved. Blockchain has the potential to completely transform the electricity trading industry and make it more transparent, effective, and sustainable with the right legislative backing and technical development.

DR. ARUP DAS
HOD, *Assistant Professor, Electrical Engineering*
Siliguri Institute of Technology

Faculty Achievements: MSIT

Dr. Manash Chanda has been appointed as Editorial Board Member of the Springer Nature, a SCI Journal.

In the **Electrical Engineering Department, Dr. Nabanita Chandra Chakraborty**, Assistant Professor, successfully completed her Ph.D. from Jadavpur University on the topic "Optimal Placement, Analysis, Positioning of DGs and Energy Management of Microgrid" under the guidance of **Prof. Dr. Sujit K. Biswas** and **Prof. Dr. Ambarnath Banerji**. Alongside, Dr. Mousumi Jana Bala and **Dr. Epsita Das** also completed their doctoral research from Jadavpur University, enhancing the department's research profile. Additionally, **Prof. Sayanti Moulik** and **Prof. Pritam Chandra** successfully completed the AICTE-QIP-PGCertification Program, specializing in Cybersecurity and Blockchain and Machine Learning, respectively, thereby strengthening the department's expertise in emerging technologies. **Dr. Kaustuv Dasgupta**, Assistant Professor, secured the Best Paper Award at IEMPOWER-2025, showcasing the department's growing research strength.

In the **Computer Science & Engineering Department, Dr. Surama Biswas**, Associate Professor, earned significant recognition from Springer Nature, being elevated from Trusted Reviewer to Reviewing Editor within its global reviewer community in October 2025. She was also awarded Life Membership (LM 139866)of the Indian Society for Technical Education (ISTE) in 2024 for her continued contribution to engineering education and research excellence. Dr. Safikureshi Mondal did one-year postdoctoral Research at University of California, San Diego (UCSD), CA, USA from May'24 to may'25.

In the **Basic Science and Humanities Department, Dr. Sukhendu Jana**, Assistant Professor, was promoted to Reviewing Editorby Springer Nature. He served as a Session Chair at the 2025 IEEE International Conference on Quantum Photonics, Artificial Intelligence, and Networking (QPANI 2025), organized by the IEEE Photonics Society Bangladesh Chapter. He also acted as a Jury Memberfor theInternal Smart India Hackathon at Budge Budge Institute of Technology. Dr. Jana was further honored with the prestigious "Bharat Gaurav Puraskar" by the KTK Outstanding Achievers and Education Foundation, New Delhi, in recognition of his contributions to Materials Science and Engineering.

In the **Electronics and Communication Engineering Department**, recently one patent of **Prof. (Dr.) Pani**, Professor and Head, was granted. **Dr. Swapnadip De**, Associate Professor, served as *Co-Coordinator of a 6-Day ATAL Faculty Development Program (FDP) on "Next-Generation Semiconductor Sensing: Integrating Nanotechnology and Materials"* held from August 18-23, 2025, and successfully completed two advanced FDPs during the year. **Dr. Swarnil Roy** and **Dr. Sudipta Ghosh** are serving as Executive Committee member of the IEEE SSCS ExComm. Committee, IEEE Kolkata Section. **Dr. Swarnil Roy** is the Immediate Past Chair of the IEEE SSCS Kolkata Chapter.

The Changing Role of Artificial Intelligence in Engineering

Nowadays, artificial intelligence (AI) is more than just a futuristic concept; it is a key element that is revolutionizing all facets of engineering. As experts and educators, we are seeing a revolution in technology that is changing how engineers innovate, design, and evaluate. Artificial intelligence is boosting productivity and transforming conventional engineering methods in everything from predictive maintenance in mechanical systems to smart electrical grids that optimize energy use. In civil engineering, AI-based modelling aids in forecasting how structures will react to different stress levels, enhancing safety and durability. In electronics and communication, intelligent signal processing increases precision while consuming less energy. These illustrations demonstrate how AI is being smoothly incorporated into numerous engineering fields. It's also interesting to see how self-driving technologies like robots, smart drones, and cars are being developed. Things that people used to think were futuristic are now part of our everyday technology. Nevertheless, these improvements come with fresh duties. Engineers need to think about things like data privacy, algorithmic bias, and how to use technology responsibly. Honesty and human values should always guide new ideas. It's an exciting time to learn and mentor students and people who want to become engineers. It is important to be good at machine learning, data analysis, and computational thinking, but it is also important to be good at teamwork, ethics, and empathy. In addition to making smart systems, the next generation of engineers will also teach them how to make choices that are good for everyone. Engineers won't be replaced by AI; instead, it will help them come up with new ways to solve problems. Human intelligence and artificial intelligence need to work together to make the world smarter and more environmentally friendly. This is where engineering is going.

BIKIRAN MAJUMDAR
Bachelor of Computer Application
Siliguri Institute of Technology

Education Ministry Directs using Zoho Office Suite

"Atmanirbhar Bharat" is a vision of the Indian government, launched in 2020 by Prime Minister Narendra Modi. The initiative aims to foster innovation, encourage domestic production, and promote Indian businesses to reduce dependence on imports, ultimately leading to a self-reliant India. In this digital age, people spend most of their time on digital devices. Therefore, it is imperative to advance Indian apps, services, and software to reduce foreign dependency and promote homegrown products. Aiming to foster digital self-reliance, the Ministry of Education has mandated the use of the Zoho Office Suite for all o?cial documentation - a notable stride toward Atmanirbhar Bharat. Zoho Office Suite is a secure and collaborative work platform seamlessly integrated across systems to enhance user productivity. Zoho Corporation, founded by Sridhar Vembu and Tony Thomas in 1996, is an Indian multinational technology company known for its comprehensive suite of software and web-based tools - serving as a strong alternative to Google Docs, Sheets, and other similar platforms. Zoho Office Suite includes Writer, sheet, and Show, can completely replace tools like Google Docs, Sheets, and Slides.

Zoho Writer: A user-friendly word processor for drafting, sharing, and real-time collaboration, with an easy review process. Zoho Sheet: A versatile spreadsheet tool offering data import, automation, and integration with other Zoho apps for analysis and charting. Zoho Show: A presentation app for creating and sharing multimedia-rich slides with seamless Zoho integration. Zoho's India-based servers ensure data sovereignty and strong privacy compliance - a major advantage for secure digital operations. Zoho faces challenges in competing with well-established organizations like Google and Microsoft. However, the promotion of the Zoho Office Suite by the Indian government can help increase its adoption and play a key role in shaping India's technological landscape. Let's embrace the Zoho Office Suite and make Indian software a global name.

Dr. Tumpa Banerjee
Assistant Professor
MCA, Siliguri Institute of Technology

Events of Siliguri Institute of Technology

Seminar on Electronics & Photonics (IEEE EDS outreach program activity)

Students enriched their knowledge not only in electronics and in photonics but also came to know how to become a member of IEEE and as a member what can they do in their future life in the modern world.Students also encouraged to start up a new business and offered internship by the Dimension Lab. The speakers showed their interest for future expert talk,keynote talk and for other opportunities.

Industry Academia Meeting with PCS Global

The objective of the meeting was to discuss Internship opportunities and Placement opportunities to be provided by PCS Global for SIT students. The Outcomes wereEnhanced collaboration between academic institutions and industry partners, Identification of opportunities for internships, training, and student development, Agreement on conducting joint workshops, seminars, and research projects, Strengthening the linkage between academic curriculum and industry requirements.

Prompt to Product: A GEN-AI Based App Competition

The primary objective of the "Prompt to Product" initiative is to conceptualize, design, and develop a functional Generative AI-powered prototype from scratch within 15 days, demonstrating the rapid ideation-to-deployment capability of GenAI technologies. The project aims to explore how efficiently prompts, creativity, and AI tools can be integrated to produce an end-to-end working solution that addresses a real-world problem through automation, intelligent content generation, or data-driven decision-making.

A special awareness program on "Mental Health and Wellbeing"

A special awareness program on "Mental Health and Wellbeing" was organized for the B.Tech 1st-year students AY 2024-25 in J.C Bose seminar hall, Siliguri Institute Of Technology With the transition to college life often bringing emotional, academic, and social challenges, the session aimed to educate students on the importance of maintaining mental wellness and equip them with practical coping strategies. The event witnessed active participation from 110 first-year B.Tech students, along with faculty and staff members.The students were enriched by session and they learnt good mental health include enhanced ability to cope with life's stresses, realizing potential, productive work, strong community contributions, improved physical health, and greater overall well-being.

Expert Lecture Session on the Enhancement of Research Environment of the Institution

The main Objectives of the Event was to Discuss on Enhancement of the research environment of the institution and various avenues pertaining to that enhancement, with Principals of various colleges and heads of Engineering Departments of SIT. The Key Points Discussed were Interdisciplinary Projects: Develop projects where various departments can collaborate and contribute valuable inputs.Region-Specific Research Opportunities: Given the geographical location in the Terai-Dooars region, projects can be designed around tea gardens and real-world local problems with social impact.Emerging Technologies: Work on integrating drones, IoT, data, and image processing for research-based projects.Project-Based Learning (PBL): Focus on strengthening project-based learning to enhance students' practical knowledge and innovation.Speakers were Ms. Tullika Pandey, Scientist 'G' & Group Coordinator (HRD), MeitY; Shri Asit Kumar Singh, Chief Investigator, C-DAC Kolkata.

Physical Activity Session for B.Tech 1stYear students

The Department of Engineering Sciences & Humanities of

Siliguri Institute of Technology organized a "Physical Activity Session" for B.Tech 1st Year students of the 2025-26 batch. The session aimed to encourage physical fitness, discipline, and overall well-being among students. Various structured exercises and group activities were conducted under the supervision of faculty members and instructors. Students participated enthusiastically, displaying teamwork and dedication throughout the session. The event emphasized the importance of regular physical activity in maintaining a balanced lifestyle. It concluded successfully with positive feedback from participants and appreciation from the organizing department.

A seminar on "H3: The Complete Student"

The objective of this seminar was to foster holistic student development by enhancing emotional intelligence (EI) as a foundation for effective leadership and personal growth. The program aims to help students understand, manage, and utilize their emotions to build resilience, empathy, and self-awareness-key traits of successful leaders. The Speaker was Rev. Praveen Titimus, Assistant Professor, St. Joseph College, Darjeeling.

Workshop on PHP

Objectives of the Event was to learn about PHP, to create real time projects using PHP& to learn to integrate PHP with SQL. The Speaker was Mr Sourav Ghosh, Software Developer, Appycodes.

Workshop on Digital Marketing with AI

Department of BCA, SIT organised a Workshop on Digital Marketing with AI. Objectives of the Event was to learn about Digital Marketing, create awareness about present day AI tools & to learn to integrate Digital Marketing with AI. The Speakers were Jyotirmoy Pal,Founder, Technogleam Digital Solutions LLP and Anisha Ghosh, Digital Marketer, Technogleam Digital Solutions LLP.

Skill enhancement program

Department of Business Administration (MBA program) of Siliguri Institute of Technology organized weeklong skill enhancement program at their campus for the newly admitted students of 2025-26 Batch. This workshop was conducted by Mr Anindya Chatterjee Founder and Managing Partner of Knowledge Corp, Kolkata. This workshop helped the fresh graduates to upgrade their essential skill sets for workplace success and career advancement in their journey of post-graduation.

Extempore Speech Competition on IKS

Extempore competition for the B.Tech 1st year students organized by the Department of Engineering Sciences and Humanities was held to inculcate the newly admitted students on Indian Knowledge System to create an awareness of India's rich intellectual and cultural heritage since the dawn of Indian civilization The main objectives of extempore speaking are to enhance communication skills, build confidence, promote critical thinking, and improve spontaneity.All the winners were felicitated with the trophy. Our Hon'ble Principal-in-Charge Dr.Joydeep Dutta along with Dr.Arundhati Chakrabarti and Mr.Anindya Basu from SIT Diploma College handed away the prizes to the winners of this extempore competition.

Yoga and Meditation Session for B.Tech 1st year

A Yoga and Meditation Session was organized for the B.Tech 1st Year students of Siliguri Institute of Technologyat the Badminton Court of the SIT Campus. The session aimed to promote physical fitness and mental well-being among students. Under the guidance of the instructor, students performed various yoga asanas and pranayama techniques followed by a short meditation practice. The event helped students relieve stress, improve focus, and understand the importance of a balanced lifestyle. Overall, the session was highly beneficial and well-received by all participants.

Knowledge Tour for B.Tech 1st Year Students

The Department of Basic Sciences and Humanities (DESH) of Siliguri Institute of Technology successfully organized a Knowledge Tour for the B.Tech. 1st Year students at the North Bengal Science Centre, Siliguri. The primary objective of this visit was to provide students with practical exposure to science and technology, while fostering curiosity, teamwork, and experiential learning beyond the traditional classroom environment. A total of 162 enthusiastic students, accompanied by faculty members, actively participated in the tour. The programme featured a series of engaging and educational sessions such as the Digital Planetarium Show, 3D Show, and Science Show, offering students an immersive experience in astronomy, visual learning, and applied science. A major highlight of the event was the Special Science Show conducted by Dr. Biswajit Kundu, Education Officer of the North Bengal Science Centre. His captivating demonstrations stimulated scientific thinking and inspired students to explore real-world applications of theoretical knowledge.

Talk on "Indian Knowledge System"

The objective of the programme is to introduce the idea of Indian Knowledge System to the students for their holistic and multidisciplinary development as well as to introduce ancient Indians' contributions in Science, Mathematics, Architecture, Philosophy, Medicine, and Literature in today's knowledge system. Eminent speaker Swami Vishwadharananda, Secretary, Ramkrishna Mission, Siliguri, Darjeeling, enlightened the session to develop a value-based mindset and cultivate wisdom with modern technological innovations with responsibility, and awareness of India's intellectual heritage among the students.

Agomoni 2025

Siliguri Institute of Technology recently celebrated the arrival of Goddess Durga (Agomoni) with great fervour and enthusiasm. The festivities, which signify the victory of good over evil, brought together students, faculty, and staff in a joyous celebration of community and devotion.The students showcased their talents through a series of colourful and heart-rending cultural performances, which mesmerized the audience. The event was a testament to the institute's commitment to fostering a sense of cultural heritage and unity among its members.

Knowledge Knockout: Season 2

SIT organised a mega Inter-School Quiz Competition, Knowledge Knockout: Season 2. The Knowledge Knockout is an annual event that brings together school students for a day of intellectual challenge and fun. Mr. Surya Narayanan as the Quiz Master, founder of Quiz Catalyst and acts as the Quiz Master on Pan Pan-India basis with reputed organizations, anchored the event. The Event received wide acclaim from Educators, Students and their Parents alike for its excellent organization and High Standards. Knowledge Knockout- 2025 stands as a Testament to the Academic potential of North Bengal's youths and the role of an institution like SIT in nurturing the future leaders. Students of Class XI and XII from 98 Schools of North Bengal participated in this mega quiz event.

Recent Achievements of Siliguri Institute of Technology

A copyright has been registered to **Anirban Sarkar** *(Assistant Professor)*, Bachelor of Business Administration for the work titled "Business Model For Small Scale Handicraft Industry in West Bengal" as disclosed in the below mentioned application in accordance with the provisions of the Copyright Act,1957.The business model for a small-scale handicraft industry in West Bengal focuses on leveraging traditional artisan skills to produce unique, culturally rich products for local and global markets. It emphasizes low-cost production, direct-to-consumer sales through e-commerce and exhibitions, and collaboration with government and NGOs for funding, training, and market access.

From over 1100 participating teams across the nation, a team of our brilliant 3rd Year students - Amol Kumar, Bhaskar Kumar, Rohini Kumari, and Masaddur Rahaman from **CSE & IT Departments** under the mentorship by Dr. Prasanta Kumar Roy of CSE Department - have secured a place in the Top 35 teams at the **"National CyberShield Hackathon -2025"**.This prestigious Cyber Security based hackathon has been organized by Maulana Azad National Institute of Technology (MANIT), Bhopal, Vellore Institute of Technology (VIT), Bhopal, Madhya Pradesh Police, State Bank of India, along with leading industry partners including ClearTrail Technologies and Netlink. Their achievement highlights the technical excellence, problem-solving ability, and innovation mindset of our students, making us immensely proud. Congratulations to the team for this remarkable success and best wishes for their career.

Siliguri Institute of Technology has been declared as the Winner of "Collegeke TASHANBAZZ" organized by RedFM at Siliguri.

The Electronics and Communication Engineering (ECE) Department at Siliguri Institute of Technology (SIT) proudly announces that **Ayandeep Dutta**, 2025 PO batch of ECE Department has been placed at oncampus recruitment in Bharat Electronics Limited (BEL) a Navaratna company of Government of India.

Activities of Netaji Subhash Engineering College

Students of **AEIE** department of Netaji Subhash Engineering College engage in hands-on instrumentation training under expert guidance during their Skill Development Program at CSIR-CGCRI, Kolkata.

Electrical Engineering **(EE)** students of NSEC explored real-world power generation during an industrial visit to CESC's Southern Generating Station.

Team **KrishiConnect** from NSEC became the Season 4 winners of Hack4Bengal 2025, celebrating their victory for their groundbreaking agri-tech solution, KrishiConnect.

Students presented their innovative solutions to the evaluation panel during the **Internal Smart India Hackathon 2025 (SIH 2025)** at NSEC, showcasing their creativity and technical acumen.

The **National Sports Day 2025** was celebrated at NSEC, reflecting the spirit of enthusiasm and athletic excellence.

Workshop on Protecting Intellectual Property Rights (IPRS) & IP Management for Start-Ups

The workshop on "Protecting Intellectual Property Rights (IPRs) and IP Management for Start-Ups" was organized with the objectives: To **create awareness** among students, researchers, and entrepreneurs about the importance of Intellectual Property Rights in fostering innovation and protecting creative ideas, to highlight the role of IPRs in safeguarding start-up ventures, ensuring competitive advantage, and enabling sustainable business growth, to familiarize participants with the fundamentals of IP management, including patents, copyrights, trademarks, and trade secrets, to address the challenges faced by start-ups in protecting and managing their intellectual assets effectively, to provide practical guidance on building an IP portfolio and leveraging intellectual property as a strategic business tool, to encourage innovation and entrepreneurship by equipping participants with the knowledge of legal safeguards and best practices in IP protection. Dr. Indira Banerjee who has been at the forefront of Intellectual Property Rights for an incredible 32 years was the speaker.

Recent Events by Techno International Batanagar

Smart India Hackathon Internal Hackathon 2025

The Technical Innovation Cell of Techno International Batanagar conducted the SIH. The hackathon lasted for a duration of 10 hours and witnessed the participation of 23 teams with a team size of six members, including at least one female team member. The problem statements for the hackathon were carefully curated with respect to the App Development, Web Development and AI/ML domains and at the same time their difficulty was set considering the motive of the Hackathon, which was to act as a stepping stone into the world of Hackathons.

HokTorko - Inter-College Debate competition

Ei Samay in collaboration with Techno India Group organized a thought-provoking debate competition on the topic "What's the purpose of further education when AI will do everything?" The event was conducted in two phases- Initial round (College level) followed by Finale (District level). A total of 100 participants enthusiastically engaged in the debate competition in the initial round. The participants showcased remarkable skills and a deep understanding of the topic. All participants had impressive performances, showcasing their well-researched arguments. Out of all, 10 students were shortlisted for the Finale round at Budge Budge Institute of Technology. The debate competition was a grand success, marked by enthusiastic participation and thought-provoking arguments. Events like these play a crucial role in developing communication and analytical skills among students.

A two-day **Inter-college Football** Tournament was organized by the students of the Varsity-Cup Management Committee in collaboration with the EXC Committee at Techno International Batanagar College. Ten teams from various colleges, including several government Law colleges, participated in this tournament with great enthusiasm. In addition to the other college teams, two teams from Techno International Batanagar also took part in the tournament. The tournament was structured into four groups, each consisting of three teams, with one team from each group advancing to the semi-finals. All teams showcased exceptional performance, making it challenging to predict the winner until the very end. The final match was contested between Techno Main Salt Lake and a team from IEM College. It was an exhilarating match. Until the last minutes, the score was tied at 1-1, and the outcome was not resolved by a tie-breaker; ultimately, the winner was determined by a toss and the team from Techno Main Salt Lake was awarded as winner of Varsity Cup 2K25. The audience expressed high praise for the tournament on both days.

The **Induction Program** was graced by dignitaries from the college authority and industry experts. In addition to B.Tech. fresher's, new students from BCA, BBA and Diploma sections were also included in some major components of the induction program. The induction program was designed in such a way so that newly admitted students get accustomed to sectors like indoor and outdoor sports, Yoga, cultural activities etc. The Yoga camp was organized at the campus under supervision by a Yoga expert. Along with the extracurricular activities, academic modules designed by AICTE are also being covered.

Beyond Gaming: How the Industrial Metaverse is Reshaping Training and Design

By merging the real and virtual worlds, the Industrial Metaverse is quickly changing business and going beyond consumer entertainment to include essential operations like design and training. It provides an immersive, persistent virtual environment for industry and is based on technologies such as Extended Reality (XR), Digital Twins, and high-speed connectivity. Design and engineering are revolutionized by this convergence. A single, photorealistic 3D digital twin of a factory or product can be created by engineers and architects working in international teams. By using real-time simulations to test, refine, and validate designs, they can expedite time-to-market and eliminate the need for expensive physical prototypes. Virtually all mistakes are identified and corrected before any steel is cut. The advantages for workforce development and training are significant. In a secure, risk-free virtual simulation, employees can rehearse intricate, high-risk tasks, such as operating heavy machinery or handling an emergency. This experiential learning, which is frequently facilitated by VR/AR headsets, improves memory retention, reduces onboarding time, and permits ongoing skill development without interfering with day-to-day operations. The Siemens Electronics Factory in Nanjing, China, is a prime example. Before construction started, Siemens developed a thorough, physics-based Digital Twin (the industrial metaverse environment) of the new factory. This made it possible for engineers to test production flows and layouts using innumerable simulations. Fixing design errors in the virtual environment, which removed expensive physical rework and delays, was one of the positive outcomes. As a result of this optimization process, the completed factory immediately saw a 20% increase in productivity and a 40% improvement in space efficiency. This new reality moves the risk of failure from the factory floor to the virtual world. By allowing people to design and train inside perfect digital copies, the Industrial Metaverse delivers a powerful formula for industry: less waste, faster innovation, and a safer, more skilled workforce.

DRISHYA AGARWAL
Assistant Professor, *Computer Applications*
Siliguri Institute of Technology

Initiatives and activities by Techno International Batanagar

ACADEMIC ACTIVITIES: An assessment test to be conducted every week to prepare the students for the screening tests by IT companies.Department to maintain progress report of individual student.

SOFT-SKILL ACTIVITIES: Soft skills are an essential part of improving one's ability to work with others and can have a positive influence on furthering one's career.The week-wise activities to revolve around the following events: Verbal and Non-verbal communication, Group Discussion, Debate, Extempore, Elocution.

TECHNICAL ACTIVITIES: Technicalskills are thespecialized knowledge and expertise required to perform specific tasks and use specific tools and programs in real world situations.The activities will revolve around the following events: Technical Quiz, CA1 presentation, Technical presentation, Value Added Training, Alumni Talk and Prayas2k25.

SPORTS ACTIVITIES: Sports day brings together the entire school community in a spirit of camaraderie and bonding.The sports instructor to lead daily activities like outdoor and indoor games and organize a Sports Day.

CULTURAL ACTIVITIES: Cultural activities foster a sense of community, promote creativity, develop social skills, enhance cultural awareness, and provide a platform for self-expression.The following events to be conducted are Flower Rangoli, Vasant Panchami Utsav, Barsha Baran, Rabindra Jayanti, Equinox 2k25.

PODCASTS: A podcast series conducted by the faculty provides insights into the various courses offered at the institute, along with their academic and professional benefits. It also features interviews with placed students who share their experiences and guidance for future aspirants. The initiative is both informative and motivating, as it highlights the relevance of the courses and showcases real-life success stories to help students make the right career choices.

WEBINARS/SEMINARS by ALUMNI: Regular seminars/webinars conducted by the institute's alumnicreate a platformto share their professional experiences, industry insights, and career guidance with the students. Such initiatives are highly beneficial and inspiring, as they not only provide practical knowledge but also motivate students by showcasing the achievements of the institute's alumni network.

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